Drug and Cosmetic Industry

December 1956 Vol. 79 No. 6

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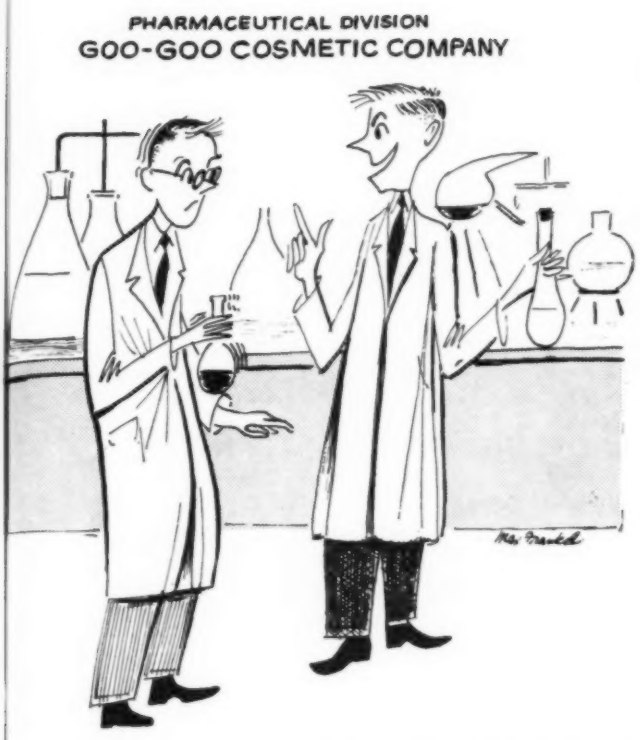


"They want a seductive odor in the Athlete's Foot Cream."

Keeping Posted

ADMA Government Research Committee

The American Drug Manufacturers Association has set up a three-man committee to study the activities of the Federal government in the fields of medicine and drug research. E. N. Beesley, president of Eli Lilly and Company, is chairman. Serving with him are Dr. W. D. Malcolm, president of the Lederle Division of American Cyanamid Company, and Dr. E. H. Volwiler, president of Abbott Laboratories.

Great expansion in government activity has taken place during the past few years in the field of medicine through the National Institutes of Health of the U. S. Public Health Service, and the National Research Council, with particular attention being given to cancer and heart diseases. Congress appropriated close to $20 million during the last session for cancer alone, and as part of this program, the U. S. Public Service has set up a cancer research center to screen drugs for their possible cancer-inhibiting qualities.

Since the tranquilizers are rapidly becoming an important tool of doctors, the U. S. Public Health Service has also recently established a center for special studies of these drugs.

The ADMA committee will devote its attention primarily to the programs of the National Institutes of Health and the National Research Council, but will also be interested in clinical work being conducted by the Veterans' Administration and other Federal agencies. Aims of the committee will be to keep abreast of the studies being conducted by the government and lend its cooperation when called upon. The committee is to be aided by an advisory scientific group of five members appointed by Mr. Beesley.

Newspaper Ad Standards

The Drug and Medical Advertising Acceptability Standards of the Minneapolis Star and Tribune, adopted November 1, 1951, have been revised as of November 1, 1956. Some interesting parts of this code are:

Members of the Medical Advertising Acceptability Committee are not available for personal interview.

Products advertised as a "cure" for diseases or ailments generally recognized as requiring the care of a physician are not acceptable.

Products offering relief from pain of such diseases or ailments as arthritis, neuritis, rheumatism, etc., may be acceptable providing the copy makes it clear that the product is not offered as a cure. In such cases, whatever phrases are used to convey a "relief from pain of" message must be in sufficiently large type to avoid misleading the reader and must make it clear that such relief is temporary.

Advertising headlines or copy which is disgusting (e.g., "itching piles"), in poor taste (e.g., "hot flashes"), uses exaggerated phraseology, or is otherwise objectionable, must be deleted.

Phrases like "miracle drug," "wonder drug," and "amazing new discovery" must be considered objectionable unless there is evidence from competent medical sources to substantiate such claims. A recognized and approved antibiotic in the formula may serve as justification for referring to a medical product as a "miracle drug."

The word "amazing" is a much over-worked word in medical copy, and will usually be considered objectionable unless it is used adjectivally only to help invite attention and to draw readership to the advertisement and thus is clearly not applicable to claims implied or expressed concerning the product's effectiveness.

Preparations offered as aids to weight control must be identified as part of a "Reducing Plan" to avoid conveying the idea that the preparation itself without diet will correct an over-weight condition. A reducing remedy may not be described as an "easy" way to lose weight unless there is corrobating evidence from competent medical sources to support such claims.

If an advertiser states that the product has been

DOW PROPYLENE GLYCOL, U. S. P.

BEST SOLVENT FOR IMPROVED SUN-TAN LOTIONS

. . . provides better emollient action, economy of formulation, outstanding carrier and preservative qualities

Size up your formulating problems in creams and lotions. Is your main one the high cost of ingredients? Achieving good emollient action? Or possibly you need better solubility of the sun-screen ingredient in your sun-tan lotions.

One solvent—Dow propylene glycol—is the answer to *all* these problems.

Versatility is the key word in describing Dow propylene glycol. Yet economy is important, too. Many manufacturers use it to replace more expensive ingredients. Two other factors *you can depend on* with Dow propylene glycol—quality and supply. Strategically located terminals across the country get your shipments to you promptly.

You—and your product—can benefit greatly from the use of Dow propylene glycol, U.S.P. To get a free sample and information on properties, write to THE DOW CHEMICAL COMPANY, Midland, Michigan, Dept. OC 855G-2.

you can depend on DOW CHEMICALS

DOW

"tested and approved" or employs some similar phrase, we must have the name and address of the testing laboratory or clinic for our files, together with the test findings.

Testimonials in the copy of an advertisement may be used without the names and addresses of persons giving such testimonials. However, names and addresses of persons giving the testimonials must be available to us if called for.

Use of posed pictures and headlines in such a way that they mislead the reader into thinking that they are genuine testimonials must be avoided, i.e., testimonials using photos of doctors, nurses, or clergymen. When posed photos are used, a line such as "Pictures posed by professional models" must be included.

Warner-Lambert Buys Nepera

Warner-Lambert Pharmaceutical Company continues to expand through acquisitions. The latest company to be taken over will be Nepera Chemical Company with an extensive manufacturing plant at Harriman, New York, and laboratories and pilot plant at Yonkers, New York where it conducts extensive pharmaceutical research and new product development. At Harriman, Nepera produces a variety of pharmaceutical specialties, as well as a number of bulk fine chemicals, and intermediates which are employed in manufacturing other products by the company for sale to the pharmaceutical industry. A Nepera subsidiary, Anahist Company, markets Anahist and Super Anahist.

The acquisition, being placed before Warner-Lambert stockholders on December 12, is to be by exchange for all the Nepera stock, 178,079 Warner-Lambert common shares and 70,702 shares of $100 par value $4.50 cumulative preferred stock. At the December 12th meeting Warner-Lambert stockholders will be asked to authorize the preferred stock issue, and to increase the number of authorized common shares for this purpose and possible future corporated requirements.

On a market value of $45 per share for Warner-Lambert stock—which was the price the day the deal was announced—the value of the common and preferred stock being given for Nepera is $15,083,755. The consolidated net worth of Nepera is given by the two companies involved as $9,500,000 as of May 31, 1956, and consolidated net income for the calendar year 1955 is given as $1,300,000, although 1956 earnings "are expected to considerably exceed those for last year."

Advantages to Warner-Lambert are given as broadening the company's product base in the pharmaceutical field in this country as well as overseas; adding "the rapidly growing Anahist and Superhist cold remedies to its proprietary products;" and bring to the company a well integrated manufacturing operation to supply the basic ingredients utilized in some of its products and fine chemicals for sale to other companies. Also the addition should add impetus to the company's program of scientific research and development.

William S. Lasdon, Nepera president, becomes a director of Warner-Lambert and a member of its Executive Committee. Stanley S. Lasdon becomes a director and vice-president of Warner-Lambert. Milton S. Lasdon becomes vice-president of Warner-Lambert and president of its Nepera Division. No organizational changes are contemplated with respect to the continuance of Nepera's activities at its Yonkers and Harriman locations.

Soaps and Detergents Rise

Soaps and detergents for the first nine months of this year topped the same period of 1955 by nine per cent. Seventy-four companies reported to the Association of American Soap and Glycerine Producers showed total soap and synthetic detergent sales of 3,053,796,000 pounds, valued at $702,203,000, compared with 2,804,005,000 pounds and $656,649,000 for the first nine months of 1955. Synthetic detergents, representing 67 per cent of the market, for the first nine months of 1956 totaled 2,064,507,000 pounds, valued at $160,640,000. This is a tonnage increase over 1955 of 18.2 per cent, and a valuation increase of 13.1 per cent. Liquid detergent tonnage of 194,872,000 pounds was 82 per cent ahead of the same period of 1955. Sales of soaps, solid and liquid, totaling 989,289,000, valued at $211,563,000, were off six per cent in tonnage and three per cent in value from last year.

Drug Retailer on Distribution

The President-Elect of the Pennsylvania Pharmaceutical Association, John M. Wyble, appears to be a member of organized retail pharmacy who sees the distribution of drug stores items in this country quite clearly. Recently, in the Question Box, conducted by Mr. Wyble in the Pennsylvania Pharmacist, the following question and answer appeared:

"Q. Are the manufacturers doing their part to keep the drug business in drug stores? We notice many manufacturers are placing their merchandise for distribution with wholesalers other than drug wholesalers. How about this?"

Answer. Manufacturers, as a general rule, are interested in keeping as much of their business in the drug store as possible.

"The answer to this question depends upon the type of merchandise that the manufacturer is producing. If it is strictly a drug store item such as medicines, prophylactics, surgical and hospital supplies, etc., we believe that the majority of manufacturers of such merchandise are trying to keep their distribution confined to pharmacies—but, please remember that some department stores, etc., are establishing pharmacies within their units with registered pharmacists in full time employment. In such cases, a manufacturer is justified in selling such outlets.

"There are thousands of products sold in drug stores which are not exclusive drug store items such as sundries, razor blades, toilet articles, cosmetics, etc., and manufacturers would seem to be justified in selling such outlets as have customer demand for their products. By the same token, they have the right to sell such wholesalers as will give them access and distribution to these many types of retail outlets.

"Never forget that the customer writes the ticket in the final analysis as to where they will buy their mer-

Why you should use 'ROCHE' THIAMINE

HYDROCHLORIDE AND MONONITRATE

(vitamin B_1)

Here are ten persuasive reasons why 'Roche' thiamine should be your choice for pharmaceutical manufacturing

1. **U. S. P.** Both 'Roche' thiamine hydrochloride and mononitrate equal or exceed U. S. P. specifications.

2. **TWO TYPES.** Roche has *two types* of thiamine hydrochloride available for you:

   Regular—*for tablets, capsules, dry and liquid nutritive supplements and multivitamin preparations.*

   Ampul—*specially prepared for use in manufacturing parenteral solutions.*

3. **SPECIAL PROBLEMS.** Roche has thiamine mononitrate to help you meet unusual stability problems which can occur in dry cereal or pharmaceutical products. Also it may have advantages in certain pharmaceutical products where the pH range is above the safe level for the hydrochloride.

4. **STEADY SUPPLY.** Because Roche makes *quality* thiamine by the tons, you can be sure of a steady, *quality* supply.

5. **RESEARCH.** Continuing world-wide research brings you the latest developments in vitamin knowledge.

6. **PRODUCTION CONTROL.** Scientific production control assures you of consistent, highest quality.

7. **QUICK DELIVERY.** Every order receives prompt careful service from convenient points. Transportation at lowest rate allowed and prepaid to destination. Special routings at cost. And you *know* you can count on our promises.

8. **PACKAGING.** Packed in polyethylene bags in ½ and 1-kilo tamper-pruf metal containers and in fibre drums up to 20 kilos for the hydrochloride, 35 kilos for the mononitrate. Small quantities in amber S.C. bottles. *Ampul type* thiamine hydrochloride is sealed under inert gas in 100 gram S.C. bottles and in ½ and 1-kilo tamper-pruf metal containers.

9. **KNOW-HOW.** Roche know-how on vitamins can help you with solutions to compounding and packaging problems.

10. **SAMPLES** and technical assistance are yours on request. Ask your Roche salesman or write the Vitamin Division.

Make a note now... **CALL ROCHE FOR VITAMINS**

Vitamin Division • HOFFMANN-LA ROCHE INC. • Nutley 10, New Jersey

NUtley 2-5000

Pacific Coast distributor: **L. H. BUTCHER COMPANY, San Francisco • Los Angeles • Seattle • Portland • Salt Lake City**

In Canada: **Hoffmann-La Roche Ltd., 286 St. Paul Street, West; Montreal, Quebec**

chandise on many of these products previously handled exclusively by drug stores and, if a retail outlet other than a drug store serves its customers courteously, at a price they are willing to pay, it may get the business.

"There have never been and probably never will be any laws in a free democracy such as the United States of America restricting the sale of these thousands of products exclusively in any one type of retail outlet.

"In the final analysis, the products which should be restricted to a drug store exclusively are those products where the knowledge and skill of pharmacy is essential to the sales of such products to Mr. and Mrs. America."

Who Gets Headaches?

A survey shows that medical students are more likely to have recurring headaches more than any other group, while farmers are the least susceptible to this ailment. These are the findings of Dr. Henry Ogden of the Louisiana State University School of Medicine, who, in a survey of 5,000 people also found that the chances of having recurring headaches are strongest in women, people under twenty years of age, and the unmarried. People with no education are less likely to be sufferers. People who are divorced or separated from their spouses are more likely to suffer from headaches than happily married couples.

Of freshman and senior medical students questioned, more than eighty per cent were sufferers. Business executives were second at seventy-seven per cent. Professional people were third at seventy per cent; housewives fourth at sixty-nine per cent; clerks fifth at sixty-eight per cent; salesmen sixth at fifty-eight per cent; manual laborers seventh at fifty-five per cent; and farmers eighth at fifty per cent.

Other findings were as to age: seventy-eight per cent of those under twenty had headaches, and the percentage dropped progressively by decades, with only about twenty-eight per cent of those over sixty being troubled; as to sex: seventy-one per cent of females surveyed were sufferers, compared with about fifty per cent for males; as to marital status: single people topped the list at seventy-one per cent having headaches, closely followed by separated with seventy-one per cent, and divorced with sixty-nine per cent, while married people registered only sixty-one per cent having headaches, and the widowed category showing only fifty-two per cent of sufferers.

Dr. Ogden said that all headaches are characterized by some kind of disturbance of the blood vessels; that predisposing factors include sex tension, glandular disturbances, heredity, high blood pressure, allergies, stress, and injuries of the upper spine; and that immediate causes include fatigue, hunger, sex tension, allergic reactions, acute nasal trouble, and excessive smoking.

McKesson Buys N. C. Wholesaler

McKesson & Robbins is continuing to expand its wholesaling activities in this country by the acquisition of the capital stock of Burwell & Dunn, one of the oldest drug wholesalers in North Carolina. Located in Charlotte, the company serves an area within a radius of 140 miles of Charlotte. It was established in 1887, and has been a member of the National Wholesale Druggists Association.

Health News Institute Committees

Nine committees have been set up to assist in the operation of the Health News Institute. The committees and the chairmen of them are: 1. Films, Radio, TV, G. Fred Roll, Smith, Kline & French Laboratories. 2. Aid to Pharmacy, Edgar S. Bellis, National Association of Retail Druggists. 3. Fact Book, Wallace S. Sims, Pitman-Moore. 4. Booklets and Pamphlets, Charles H. Prout, Mead Johnson & Company. 5. School and Colleges, James R. Beattie, Ciba Pharmaceutical Products. 6. Recruitment of Scientific Personnel, George Weiler, Chas. Pfizer & Co. 7. Professional Liaison, John F. Modrall, Eli Lilly and Company. 8. Pharmaceutical Liaison, Dr. Howard A. Prentice, The Proprietary Association. 9. Ideas and Development, Robert A. Hardt, Hoffmann-La Roche.

Pharmacist Demand Exceeds Supply

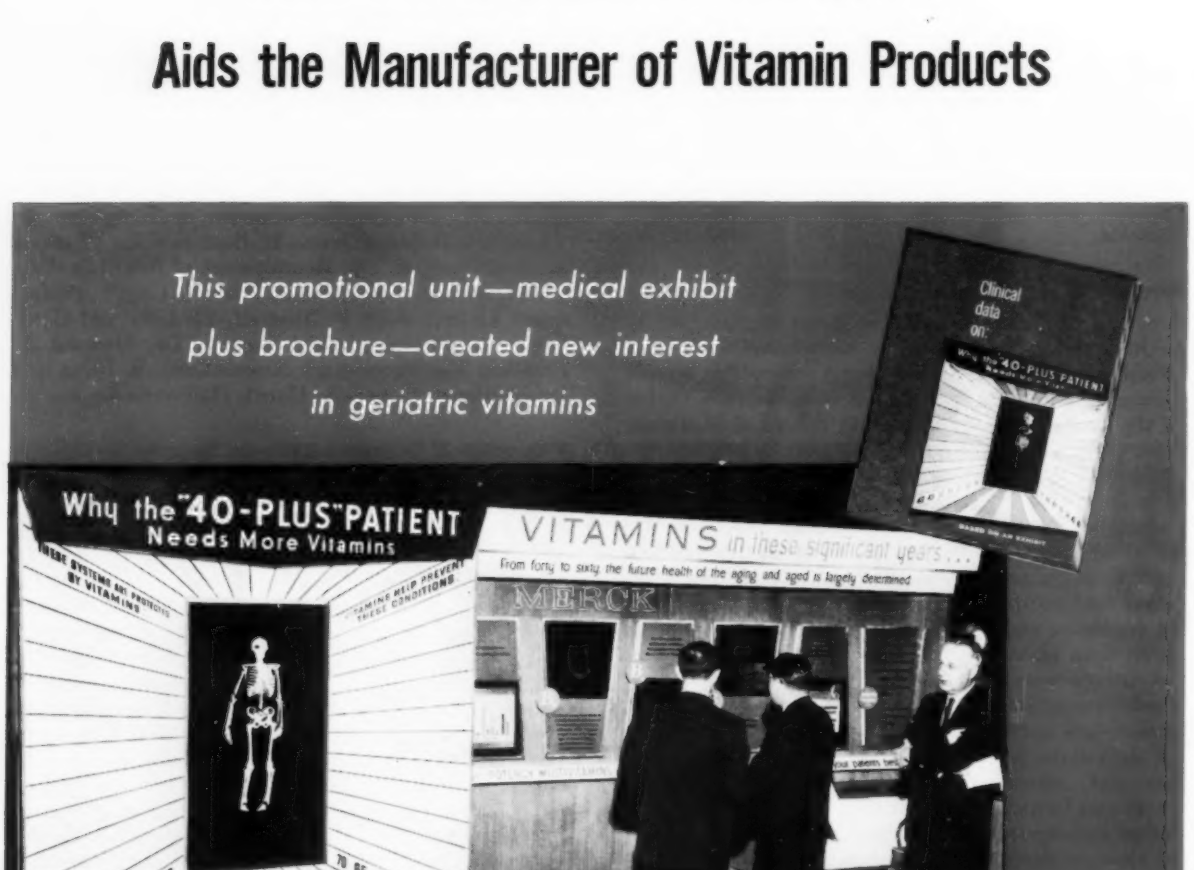
A survey conducted by the American Pharmaceutical Association among the Deans of Colleges of Pharmacy shows that the general demand for 1956 graduates exceeded the supply in most fields of employment. Of the 62 respondents, 53 were of the opinion that the demand for graduates for employment in the general-type pharmacies exceeded the supply; 42 respondents indicated a similar situation existed in connection with the demand for hospital phamacists; and 40 replies expressed opinions that demand exceeded supply in the selling and detailing fields and in prescription-type pharmacies. Only 12 felt that demand exceeded supply in the manufacturing type of employment. Thirty-four were of the opinion that over-all demand for this year's graduates was greater than in 1955; 26 felt that there was no appreciable change. None of the replies indicated that the demand was less than in 1955, while two did not give answers.

In estimating the number of hours' work per week for 1956 graduates going into retail pharmacy, of the 54 who answered the question, 21 gave a figure of 48 hours, 20 gave values below 48, and 13 above 48. Forty-one of the 54 respondents thought that the work week was in the area of 48 hours or less. Figures for the "range of hours" ran as low as 40 and as high as 65 per week. Forty-two thought the work week hours were about the same as in 1955; 10 felt that they were less; and one thought they were greater.

FDA and Hospitals to Cooperate

A new joint study being conducted by the Food and Drug Administration and eleven hospitals has as its objective prompt reporting of unusual or adverse reactions to drugs. The pilot reporting system, sponsored by the FDA, is being developed with the collaboration of the American Association of Medical Record Librarians, the American Society of Hospital Pharmacists, the American Medical Association, and the American Hospital Association. The undertaking is aimed at uncovering the effects of drugs which may be revealed in some patients when these drugs are administered to large numbers of people. The prob-

How the Merck Service Program Aids the Manufacturer of Vitamin Products


This promotional unit—medical exhibit plus brochure—created new interest in geriatric vitamins
Clinical data on:
Why the "40-PLUS" PATIENT Needs More Vitamins
VITAMINS in these significant years . . .
From forty to sixty the future health of the aging and aged is largely determined
MERCK

Left panel features conditions that vitamins help to prevent. Three-dimensional models of body systems and pertinent texts fade in and out as viewer watches. Clinical transparencies and graphs at right illustrate conditions, common in "40-Plus" patients, that Multivitamins may help alleviate or prevent.

With the provocative theme "Why the '40-PLUS' Patient Needs More Vitamins," this Merck exhibit has appeared at national medical conventions in 1956 and has been viewed by physicians throughout the country. As an indication of the doctors' interest in this theme, many thousands of booklets have been requested—and more requests come in every day. On the other side of the fence, many major manufacturers have thought so highly of this material that additional thousands of copies have been and are being obtained to help in the training of detailmen.

Of course, *promotion to physicians* is only a part of the Merck Vitamin Program. Other vitamin-boosting activities include:

- ★ **unmatched information service**
- ★ **custom-tailored products**
- ★ **personalized technical service**
- ★ **promotion to the public**

Why not take advantage of these major aids to progress? Get the facts from the Merck man on his next call.

Merck & Co., Inc., Chemical Division, Rahway, New Jersey.

© Merck & Co., Inc.

lem has been magnified by the steadily increasing number of potent new drugs. It is realized that even the most extensive clinical studies will not forecast all types of drug reactions which might occur when use is generally applied throughout the entire population. Hospitals are the ideal location for observation of the effects of drugs and for obtaining essential information not available from other sources, according to the FDA.

Participating in the project are George Washington University Hospital, Washington, D. C.; Grace Hospital, Detroit, Mich.; Hartford Hospital, Hartford, Conn.; Oakwood Hospital, Dearborn, Mich; Lakewood Hospital, Lakewood, Ohio; Medical College of Virginia Hospital, Richmond; St. Joseph's Hospital, Providence, R. I.; Naval Hospital, Bethesda, Md.; Public Health Service Hospital, Baltimore, Md.; Walter Reed Army Hospital, Washington, D. C.; and Western Pennsylvania Hospital, Pittsburgh.

Census of Biological Products

For 1954, total shipments of biological products were valued at $79,822,000, 42.7 per cent greater than the $56,397,000 shipped in 1947.

Figures for 1954 include shipments of antibacterial serums and antiserums valued at $11,499,000; antitoxins and antitoxic serums $3,043,000; allergenic extracts $1,755,000; bacterial toxins, modified toxins and venoms $2,580,000; bacterial vaccines, antigens and mixed vaccines $8,646,000; biological diagnostic agents $2,263,000; normal serums, normal blood derivatives, whole blood and naturally produced antibodies $18,684,000; viruses, vaccines and tissue product derivatives $20,498,000; and miscellaneous biological products $8,854,000.

Pharmacists in Industry

The Society of Pharmacists in Industry, which originated from informal luncheon meetings first held in the St. Louis area a number of years ago, is now spreading and a group is being set up for the eastern part of the United States, with the possibility that in time a nation-wide organization may result. Further information may be obtained from W. G. Fredell, Lambert-Hudnut Division, Warner-Lambert Pharmaceutical Company, Morris Plains, N. J.

New York Health Insurance

A joint legislative committee of the legislature of New York State is considering a bill to prohibit age limits on medical and hospital benefits. The bill would compel insurance companies to allow individuals to continue their benefit rights if they left an insured group. The committee report states that many policies discontinue coverage automatically at 55, 60, or 65 years of age. Also companies that do provide coverage for older workers reduce the payments after the workers pass a specified age.

"Termination for age helps create the single greatest gap in coverage and is responsible in part for one of the most pressing social problems of the day—financing of health care for the older age groups," the committee said.

The committee members are equally critical of the refusal of some companies to permit workers to convert their group hospital and medical insurance to an individual basis when the worker was laid off or left for another job. Even where the worker has the privilege of converting, he is frequently not told of his right or the benefits available to him are restricted. Under the legislative proposal, the conversion privilege would be made mandatory with no decrease in benefits and with no discrimination because of age, sex, physical condition, race or occupation. The general aim of the committee is to prohibit cancellation, termination, or refusal to renew medical and hospital protection for any reason except fraud or nonpayment of premiums.

The legislators reported that such non-profit plans as Blue Cross, Blue Shield, and the Health Insurance Plan of Greater New York and Group Health Insurance, Inc., had put no age restrictions on their protection and had allowed conversion to individual policies when a worker left his group.

Schering Awards

Two senior medical students and one sophomore won top places—and a total of $1,500 in prizes—in the 1956 Schering Award contest for the best papers submitted on three selected medical problems of current interest. The three top winners, each of whom received a prize of $500, are Nathanile Silcon of Albany Medical College, Albany, N. Y., for a paper entitled New Applications of Antihistamines in Medicine and Surgery; Marvin I. Gottlieb of the University of Tennessee School of Medicine, Memphis, for a paper entitled Metabolic Aspects of the Aging Process; and Richard K. B. Ho of the University of Maryland Medical School, Baltimore, for a paper entitled The Clinical Use of Adrenocortical Steroids in Collagen Diseases. Three second prizes of $250 each were awarded to Marvin A. Sackner, Jefferson College, Philadelphia, who wrote on the aging process; Morton J. Robinson and Richard N. Smith, also of Jefferson College, co-authors of a paper on collagen diseases; and Francis A. Goswitz and Helen Ann Vodopick for a paper which they co-authored on antihistamines. Drs. Goswitz and Vodopick, who are now married both graduated from Marquette University Medical School this year and are currently interning at the State University of Iowa Hospitals in Iowa City.

Honor L. H. Flett

Lawrence H. Flett, formerly Director, New Products and now consultant to the National Aniline Division, Allied Chemical & Dye Corporation, was made an honorary member of Societe de Chimie Industrielle at a banquet which closed the twenty-ninth Congress of Industrial Chemistry in Paris last month. Dr. Flett, president of the American Section of the Societe, has been active in the affairs of the group in this country for many years.

Barnes and Crookes Merged

Chemway Corporation has merged two of its ethical drug subsidiaries, A. C. Barnes Company and Crookes Laboratories, "to improve operating efficiency,

strengthen research and product development, and better serve the medical and pharmacy professions," according to Charles T. Silloway, president. Chemway acquired Crookes in August 1955. Offices of the newly-merged company, known as Crookes-Barnes Laboratories, Inc., are located at Mountain View, N. J., where new manufacturing and research laboratories are nearing completion.

Factor's Project Development Division

In order to expedite the development of new products and more efficiently coordinate packaging changes of established products as they are contemplated, Max Factor & Co. has established a new company division known as the Project Development Division. Philip Libson, director of purchasing for the past three years is manager of the division, and he will develop and expedite all possible source ideas for products and product changes under a special committee for product development. He will also convert new ideas into finished products through all stages from original conception up to time of production, and will also be responsible for all legal compliances and quality standards for both the purchasing and packaging divisions. A recognized authority on creative packaging, Mr. Libson is past president of the California Packaging Club and currently a member of the organization's board of directors. He is also instructor in creative packaging at UCLA and has lectured on all phases of the industry. Dave Koslow, formerly assistant purchasing director, is now director of purchasing and will supervise purchasing of all materials, supplies, and equipment.

Alka-Seltzer's 25th Anniversary

The 25th anniversary of Alka-Seltzer and of Miles California Company was celebrated last November 26 at a Silver Anniversary Dinner held in the Persian Room of the Beverly Hills Hotel. Honored guests included Charles S. Beardsley, chairman of the board of Miles Laboratories, Walter R. Beardsley, president of Miles Laboratories and of Miles California Company, and F. G. Clancy, vice president and the man who began Miles California Company in 1931. Leaders from the drug industry included the presidents and officers of retail pharmaceutical associations, as well as the presidents and officers of wholesale drug firms in Southern California.

Training Chemists in Drug Making

A training center for top chemistry students interested in learning pharmacy drug manufacturing has been established by the Arner Co. in cooperation with the University of Buffalo. The purpose of the training program, believed to be the first of its kind in the pharmaceutical manufacturing field, is to develop a backlog of skilled, experienced chemists to meet expanding needs of the industry. Arner has set up a special night shift for undergraduate chemistry students, working under the supervision of regular graduate chemists employed by the firm. Besides helping the students to earn while they learn, the program is enabling the company to obtain additional control personnel to expedite production.

Aerosol Research

Research on basic behavior of moving aerosols has been started at Battelle Institute, Columbus, Ohio, under a $135,000 contract with the U. S. Army Chemical Corps. Subjects to be studied, under the direction of Dr. J. Mason Pilcher, include changes that occur in moving aerosol streams, methods of diluting moving aerosols, and accuracy and repeatability of aerosol sampling procedures. Much of the sampling to determine particle size distribution in this research will be carried out with a form of cascade impactor previously developed for the U. S. Army Chemical Corps. One of the study results likely to be useful to scientists and industry will be the additional knowledge of aerosol sampling methods. The Institute notes that "both the government and the growing aerosol industry are presently in the process of shifting their planning about aerosols from an empirical, cut-and-try approach to one founded on scientific research."

Chemistry and Defense

A four point program to strengthen the defense potential of the U. S. chemical industry in line with new challenges to world peace was presented by Simon Askin, president of Heyden Chemical Corporation and chairman of the Chemical Corps Industry Advisory Council of the Armed Forces Chemical Association. Before a joint meeting of the American Institute of Chemists, New York Chapter and the Chemical Industry Association last month, Mr. Askin stated that the U. S. chemical industry urgently needs help from the administration on:

1. Tax relief to offset the soaring replacement costs of obsolescent equipment which now deter vital research development.
2. More adequate tariff protection to insure U. S. independence of British and West of the Rhine supply sources for chemicals essential to national defense.
3. Realistic exemption from selective service of technically trained men needed to continue the fast pace of technological development essential to our survival.
4. Encouragement of qualified educators to adopt science teaching careers to insure a continuing supply of adequately trained personnel.

Towers to N. A. R. D.

Harry J. Towers, formerly of E. R. Squibb & Sons, has become Assistant Executive and Secretary of the National Association of Retail Druggists. This makes Mr. Towers the understudy of Dr. John W. Dargavel. Born in Ireland, Mr. Towers graduated from the University of Washington School of Pharmacy, and came to Squibb fourteen years ago from McKesson & Robbins at Spokane, Washington.

U.S.P. Glycerine by Dow

Synthetic glycerine, U.S.P., in commercial quantities is being produced by The Dow Chemical Company at its Texas Division glycerine plant after one year of operation. Dow says that current market estimates for 1956 are that 235 million pounds of glycerine will be used, of which approximately one-third will be synthetic.

BIOFLAVONOIDS and Colds

Three recent studies and an official opinion are concerned with the current problem of evaluating bioflavonoids in the treatment of the common cold. William L. Macon, Jr., M.D., Medical Director of McDonnell Aircraft corporation has written two papers: "A New Method of Treatment in Industry for the Common Cold" in the October 1956 issue of the Journal of the American Association of Industrial Nurses and "Citrus bioflavonoids in the Treatment of the Common Cold" in the November 1956 issue of The Journal of Industrial Medicine and Surgery. "An evaluation of Usefulness of Bioflavonoids and Ascorbic Acid in Treatment of Common Cold" by Harry E. Tebrock, M.D., Medical Director of Sylvania Electric Products, Joseph J. Arminio, M.D. of Ossining, New York and John Howard Johnston, M.D., Medical Director of Pratt-Whitney and Company, Inc. and "Clinical and Laboratory Evaluation of Bioflavonoid and Vitamin C Treatment of the Common Cold" by Warren L. Franz, M.D. of the Hitchcock Hospital and Dartmouth Medical School and Henry L. Heyl, M.D. of the Hitchcock Foundation appeared in The Journal of the American Medical Association for November 24, 1956.

Albert H. Holland, Jr., M.D., Medical Director of the Bureau of Medicine of the Food and Drug Administration, in a talk before the Annual Meeting of the National Wholesale Druggists' Association on November 15, 1956 read a critical editorial from New England Journal of Medicine and stated "I should like to make it infallibly clear, we in the Food and Drug Administration are concerned only with the facts. If the bioflavonoids or any other medication were really demonstrated to be effective or beneficial in the treatment of the common cold, we would have no concern. In this instance, however, the evidence at hand, perhaps regrettable, does not support the extravagant claims made for their use in the common cold. They may well be beneficial for some other medical conditions, but I am sorry to have to report that a cold is still a cold and facts are facts. Perhaps the question to be posed is—'What is a hoax?' "

In the Macon paper in the *Journal of the American Association of Industrial Nurses*, results obtained in the treatment of 1,077 cases of common cold were reported. The pattern of the studies was an adaptation of the plan used by a Special Committee of the Medical Research Council in Great Britain and Northern Ireland in "Clinical Trials of Antihistaminic Drugs in the Prevention and Treatment of the Common Cold" and reported in the *British Medical Journal* for August 19, 1950. The studies were double-blind subjective trials, with objective confirmations of symptoms and progress. Five series of studies were made in 1955; two of the trials were with one preparation of citrus bioflavonoids, three with another citrus bioflavonoid and ascorbic acid. Two of the latter three trials included sub-therapeutic doses of aspirin. The control preparation was not a placebo but the APC combination containing aspirin, phenacetin and caffeine.

In the five series of trials, 548 were in the group receiving citrus bioflavonoid combinations while 529 patients received the aspirin, caffeine and phenacetin formula. On the third consecutive day of examination, symptoms were reported to be abated and the patients improved in 74 per cent of those receiving the bioflavonoid combinations. Comparable figures for the 529 cases not receiving bioflavonoids were not given, nor are the data given in detail. Other favorable comments are made, but without presentation of statistical evidence.

In the Macon paper in *The Journal of Industrial Medicine and Surgery*, data are presented for a group of 62 patients who were treated with capsules containing 100 mg. of lemon-orange flavonate glycoside, 50 mg. of ascorbic acid and 3.5 to 4.5 grains of acetylsalicylic acid. Of these, 46 or 74.2 per cent were classified as experiencing complete or substantial relief on the second day of medication. Of the 59 patients receiving capsules containing 1.3 grains of acetylsalicylic acid, one grain of acetophenetidin and 0.2 grain of caffeine, 30 or 50.9 per cent had complete or substan-

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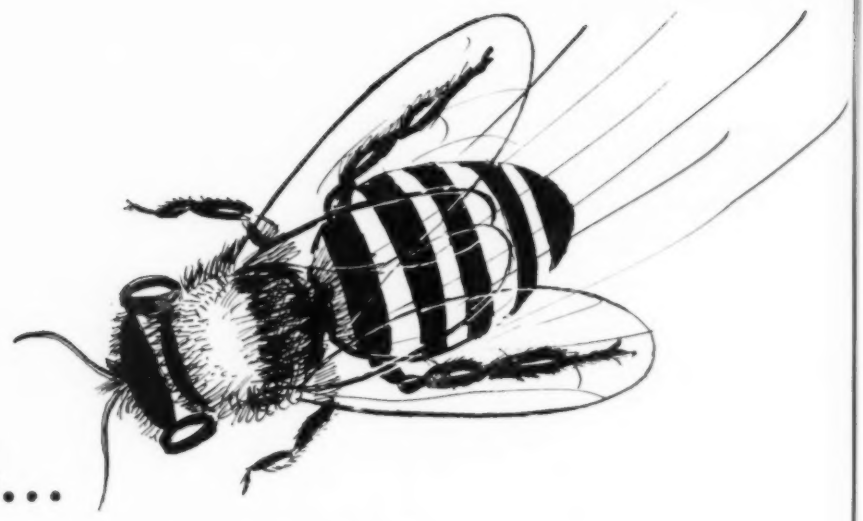
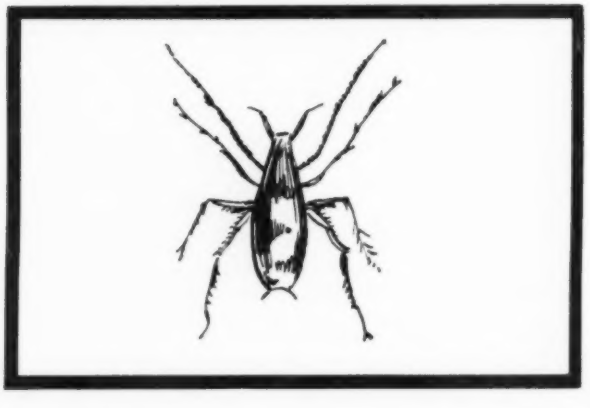


INSECTS... Oriental Food and Drugs

by Dr. Arthur H. Bryan, and Lt. Charles A. Bryan

CHIPOLA JUNIOR COLLEGE, MARIANNA, FLORIDA. FLORIDA STATE UNIVERSITY, TALLAHASSEE, FLORIDA.



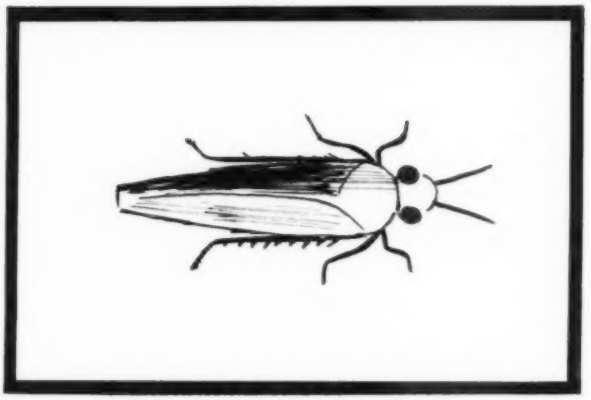
In October issue of "Science Digest" appears an article entitled, "Strange Appetites of Insects."

The Chinese have for centuries utilized a peculiar weapon in the interminable war on insects by eating these pests as both food and medicine. Many far eastern people eat insects and grubs as food just as do birds.

Today it is known that some insects taken internally do have some degree of nutritional or therapeutic value. An assay of the praying mantis or hobby horse, for example, reveals a content of 58 per cent protein, 12 per cent fat, three per cent ash, vitamin B complex and vitamin A in extracted carotinoids. The insects exoskeleton, composed of chitin, is an interesting compound of sugar and amino acids, containing about 7.5 per cent nitrogen, hydrolyzed, it yields acetic acid and glucosamine.

The dried centipede, composed almost entirely of muscle protein, chitin, mineral salts and a small amount of other compounds, was considered to be a potent medicine by primitive Chinese pharmacists for snake bites, facial paralysis, convulsions and demon possession.

Hornet's nests contain 7.52 per cent nitrogen, 11.3 per cent ash and 10.3 per cent water. The dried pill bug of the Chinese pharmacy contains as much as 45.03 per cent ash and 23.3 per cent protein. Several species of insects are used as therapeutic agents in edema or Berri Berri by Chinese pharmacists today, apparently because of their protein and vitamin B content.



The extraction of vitamins from insects would probably be a difficult process and scarcely worth while. Nevertheless, ground whole insects, with their high vitamin, protein and essential oil content, might contain something of value, now unknown, for use in human or veterinary medicine and nutrition.

Food for Thought

Bee larvae were eaten by the ancient Chinese. The

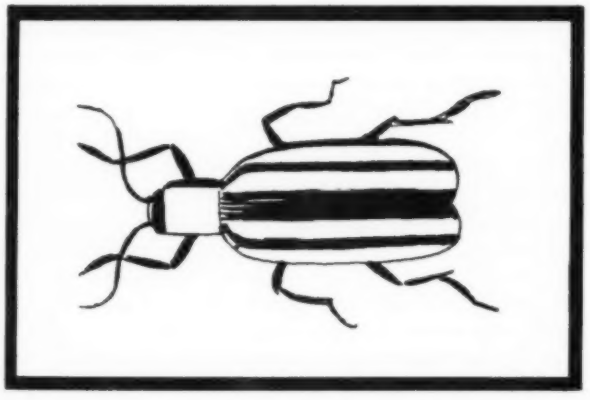
Yunnan Chih say their people eat locusts, dragonflies, and bumblebees. Cockroaches and locusts were a favorite dish in Szechuan. T. T. Liw has published an interesting article on the use of insects as food in Kwangtung, where grasshopper, golden June beetles, crickets, stinkbugs, wasp larvae and silkworm larvae are eaten. In the novel and movie, "Good Earth," the plague of locusts might have been utilized as heaven sent manna for the starving orientals.

In the Li Chi one reads that centuries ago ants, bees and cicadas were used for food and that the sacrificial food dishes contained pickled ants eggs, which were eaten in the South by tribal chieftains. The white ant, which entomologically is not an ant but a termite, is eaten even today by the hill tribes in Burma.

The Chinese, for centuries, have been pestered with insect enemies just as we have; but being philosophically minded they have utilized insects as both food and medicine. Ancient Chinese pharmacists had a vast amount of experience and knowledge of the various metamorphoses of the silkworm and gave clear ideas about the life cycle of the dung beetle and some other common insects.

Moffet, in 1634, compiled the Theatrum Insector, citing Galen, Dioscorides and other early authorities on the uses of more than 50 insects identical with those in the Chinese Herbai of Book of Drugs. The Chinese recognized the astringent and blood clotting qualities of insect galls, which were used for many centuries previously in Greece as a treatment for piles, bleeding wounds and as a general astringent.

The Greek-Roman school probably originated the first medical uses of the scorpion, earwig, bedbug, locust, maggot, buprestid, newt, ascaris, housefly, louse, dog louse, butterfly, earworm and water spider as therapeutic agents. Scorpions were used for skin



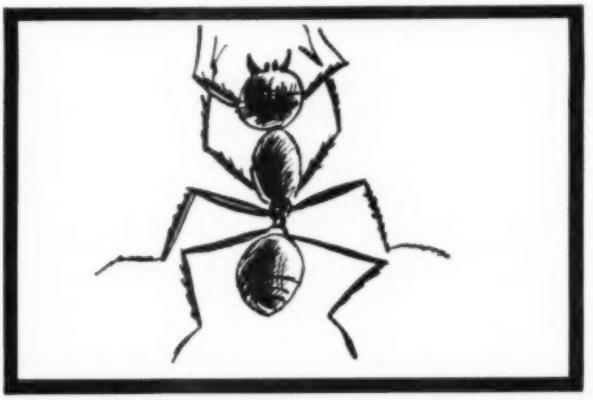
diseases, malignant boils and pus in the ears. In old European pharmacy, the bedbug was prescribed by Dioscorides, Galen and others as a cure for malarial fever. The dog louse and the pill bug were used as a diuretic and to treat malaria.

Weird Malaria Cure

The scarab or dung beetle was used as an amulet in ancient Egypt and Greece. For quartan malaria, a "cure" was provided by a live insect which was put in a red bag and hung around the neck. This was cast in a Chinese mold in the "Sheng Hui Fang" which prescribes one atlas beetle (classed by the Chinese with the scarab), two ounces of lard, one garlic bulb, a handful of onions and the tips of fifth-moon dumplings. At dawn on the fifth moon in a quiet spot, the pharmacist, bareheaded and barefooted, raises his tongue to the roof of his mouth, faces north, and compounds one pound of this mixture into 1,000 pills. Each pill is wrapped in new cotton cloth and tied on the upper arm—men are on the left, women are on the right—to cure malaria.

Horse Flies "Cure" Black Eyes

Powdered dried horseflies snuffed into the nose is said to remedy recurved eyelashes. Horseflies suck the blood of horses, so in Chinese lore they are suggested for the relief of congestion and to remove extravasated blood, as in bruises and black eyes. On the same principle, woodpeckers which pick grubs out of tree trunks, supposedly pick worms out of aching teeth if the dead bird is administered in pill form.



Worms in the teeth as cause of toothache goes back to earliest Assyrian records.

The longhorn beetle is known as "heavenly cow" because the horns are like a water buffalo's. This beetle is used to treat severe convulsions in infants and as a facial cosmetic in the Chinese beauty parlor. A Taoist devised empirical uses for "Ping Yi," fairy pills, containing spiders and leeches ground up, which are supposed to enable one to live under water. Spiders fed on lard, killed and smeared on the feet will, it is said, enable one to walk on the surface of water (frozen, perhaps?). It was believed that diving beetles cured circulatory diseases, obstruction of the bowels and stopped night crying of children due to stomach ache.

The composition of Chinese honey from bees is much the same as that produced in other parts of the world, a very concentrated form of invert sugar and a little dextrin. Its nutritive, demulcent and laxative properties are well recognized. Orientals used honey

(Continued on page 844)

Brushless Shaving Preparations

by Harry Hilfer

Brushless shave creams have achieved a great deal of popularity during the past ten or fifteen years, probably because of their convenience in use. To most men shaving is a chore and they would like to spend as little time as possible going through this daily routine. The brushless cream cuts the pre-shaving time down considerably because the brushing, associated with the lather shave type, is eliminated.

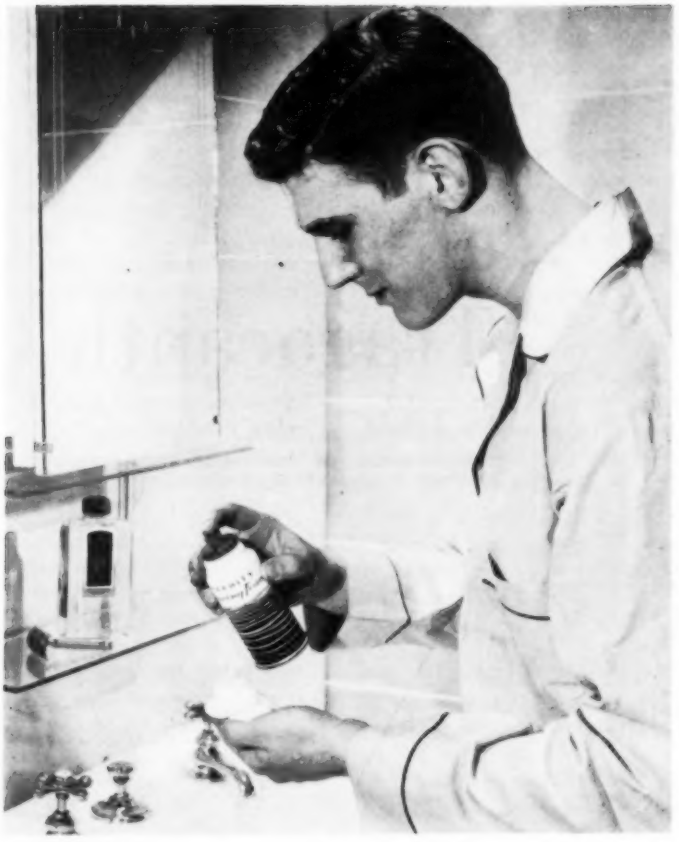
In studying the factors which must be considered as the necessary adjuncts of an easy and good shave, the principal attribute is undoubtedly the proper wetting of the beard. The untreated hair usually has an oily film surrounding it which must therefore be removed if proper wetting is to be accomplished. This prerequisite is almost automatically achieved by washing with soap and water. Since most men do this habitually before shaving, under any circumstances, this preliminary step does not add to the shaving time, and once accomplished, the brushless shave cream may be depended upon to complete the conditioning job for the razor. This latter qualification is the principal function of the brushless shave cream and consists in keeping the beard moist.

In addition, another important qualification is the ease with which the razor can be rinsed during and after shaving. Since the popularity of the brushless shave cream is dependent on the ease and quickness of the shaving operation because of its use, the easy rinsing of the blade during use becomes as important a qualification as the others. Certainly if any but the minimum effort is expended in keeping the blade clean, it would offset the conveniences inherent in the other qualifications.

In the formulation of the product the three qualifications mentioned must be borne in mind. The usual form of the brushless cream is an adaptation of the old vanishing cream. The reason for the choice of this type of vehicle is readily apparent. It contains a large amount of water, is capable of having considerable amounts of humectant incorporated and is adaptable for inclusions of other substances which may be thought as desirable. The vanishing cream is essentially a stearic acid-soap emulsion containing a large excess of stearic acid. This remains the essential system of the brushless shaving cream. In its development however, there are other inclusions to enhance its functions. Since the beard should be kept moist over a suitably long period, the formulations are made so that the aqueous evaporation is slowed down rather than accelerated. Some of the auxiliary emulsifying agents are therefore included to attain this objective such as glyceryl monostearate or other hydrophilic substances. In addition, dependence is placed on humectants further to slow the aqueous evaporation rate. Glycerin is the most commonly used, but increasing amounts of other humectants are being used for this purpose. Sorbitol and propylene glycol, for example, have come very much to the fore.

To promote easy rinsing of the blade, inclusions of wetting agents are also made. Generally speaking, the nonionic preparations seem to be best suited to their need since they are not likely to cause incompatibilities with the soap. Since the blade removes principally an emulsion consisting of the cream, some additional water, hair shavings and some soil, the addition of a wetting agent should enable these scrapings to be easily miscible with the rinse water, with a minimum of mechanical help in the form of rubbing with the fingers. These wetting agents are readily available in any one of a number of forms, but their choice must be dependent on the rest of the formula.

The soap used may be either a potassium stearate or a triethanolamine stearate, formed during the manufacturing process by the addition of the stearic acid and other oil-soluble materials to an aqueous solution of the alkali. If detergents such as the sulfated lauryl alcohols are to be included, potassium hydroxide should not be used since the potassium salts of the detergent are relatively insoluble. Due allowances should also be made for the effects on the physical form of the preparation if wetting agents are added, since such an addition usually has a tendency



COURTESY YARDLEY

to soften an otherwise suitable preparation to the point of liquefaction. Methods of overcoming this objection may be by the use of a sodium soap instead of potassium or triethanolamine so that a harder soap may be prepared with subsequent stiffening of the preparation.

Other additions in brushless creams may include mineral oil which imparts a smoother texture to the cream and by its presence further slows the evaporation rate of water. The amount of such an inclusion must necessarily be small so that the suitable wetting properties of the cream will not be impaired.

In addition to the substances already discussed which have an effect on the properties of brushless shave preparations, pleasant cooling effects may be achieved by the addition of menthol. As stated above, the nature of the vehicle makes for easy inclusion of other substances if other specific qualities are desired.

Any article on brushless shaving preparations must include a section on the aerosol shave creams, since these newer preparations seem now to be dominating the shave cream market. Their popularity cannot be attributed solely to the fact that they are novel gadgets, since there is no doubt that their resale potential has already been demonstrated. It must therefore be assumed that their popularity lies in a great convenience in use. Here is a literal example of obtaining the desired material, by the mere pressing of a button.

With the exception of the propellant, the shaving cream aerosol must be formulated as a homogeneous liquid. The usual vehicle is therefore a triethanolamine soap-water solution. At the present time, since metal containers are still the most commonly used, added precautions must be taken to be sure that they will not corrode. The corrosion reaction stems from a partial hydrolysis of the propellant to produce hydrochloric acid, which in turn reacts with the metal to start the corrosion cycle. It has therefore been customary to add an excess of triethanolamine to inactivate any HCl or other acidic substance formed. The use of the fluoro-chloro hydrocarbon propellent is covered by a patent, for shaving cream application, and there is some attempt to use butane instead.

Butane, of course, is a highly inflammable compound and must therefore be treated with the greatest respect. There does not appear to be any particular danger in its use when it is finally packaged in the container, but the packaging process itself would be hazardous unless the ultimate in precautions are taken. Butane has an advantage in being more inert than the fluoro-chloro hydrocarbons and should therefore be capable of being used with vehicles which would cause hydrolysis in the fluoro-chloro hydrocarbon. It is therefore conceivable that other preparations may be able to be produced if the difficulties inherent in the handling of butane can be overcome.

Arabic Karaya and Tragacanth Gums

by Ash J. Andon

VICE-PRESIDENT, AND VICTOR M. LEVEY, LABORATORY DIRECTOR, TRAGACANTH IMPORTING CORP., NEW YORK.

Almost any general reference to the "water-soluble gums" will somewhere mention that they have been used since early times. This kind of reference has had both a flattering effect on these gums and more recently, during the past decade, a deterring effect in the advance development work of many research laboratories.

Natural water-soluble gums have, by their very age-old acceptance, been considered obsolete by laboratory investigators because so little technical information has been compiled and made available for their study. The paucity of facts on these gums is essentially due to the fact that the natural gums have had little expected of them other than the bare essential characteristics of crude appearance, clean looks and home-made methods of testing viscosity.

The problem of evaluation starts at the origin, where crude handling methods have prevailed for centuries. The actual grading of the varieties of each gum has passed down through families; and the people employed to sort the gum are usually completely untrained personnel, often mere children.

Now Scientifically Tested and Blended

Until recently the methods employed for the grading of gum have been the same as those carried on over the past hundreds of years. With the coming of the rapidly accelerating research programs of leading pharmaceutical, chemical, cosmetic and food companies, the natural water-soluble gums began to lose their stature, since many other synthetically created thickeners, binders, stabilizers and emulsifiers were presented to these industries for evaluation. The immediate attractiveness of these new synthetics is the constancy and uniformity of products, as compared to the natural variations of their naturally created counterparts.

During these past ten years, there has been a revolution in the grading and the processing of the natural gums.

These gums are now being scientifically tested, first, at their places of origin for the properties characteristic of each of the types: viscosity, impurities, swell-power, and other factors. Later, when these lots are imported, representative samples are drawn and further evaluated by laboratory methods. Crude lots are blended on the basis of these evaluations, in order to realize the exact properties desired. In cases where stringent viscosity requirements are met, the individual lots are processed and powdered prior to blending. Samples of the powdered lots are tested individually and then blended on a small scale in the laboratory. After the blend is checked, it is reproduced on a large plant scale—after which a sample is returned to the laboratory for checking.

Processing Now Carefully Controlled

Careful control is practiced in the processing of these gums. Impurities, such as bark and mineral matter, are first removed by a sifting and blowing process. The gum is milled at a controlled rate to produce a fine and uniform quality. At this point of operation, the important milling factor is to recirculate the gum properly throughout the set-up in order to maintain uniformity of color. The utilization of a variety of equipment can produce a wide range of powders, grains and crystals. The silks used in the milling can be changed to produce a variety of meshes, providing a most versatile end product as a result.

An example can be taken of a No. 1 Gum Karaya. The original form of this gum is an irregularly rounded lump about one to two inches in length and a half-inch thick. This can be powdered finely so that you can produce all minus 200 mesh, or 50 to 150 mesh, or 6 to 16, or any number of practical combinations in between.

Gum Arabic, known as one of the oldest of the protective colloids, affords an opportunity to study an attempt at perfection. Arabic gum is graded generally as "Specially Selected," "Sifted," and "Clean Amber."

The first grade is made up of all bold gums of clean appearance; the second grade is not all bold, but contains a minimum of fines; while the third contains a greater portion of fines. You can take any of the three and improve the quality by: removing the 16-mesh siftings, then powdering; or removing the 4-mesh siftings and then powdering; or removing the 4-mesh and then cracking the plus 4 and removing the minus 10 and powdering the plus 10. As you progressively improve your sifting and screening operation, you improve your end product—no matter with which grade you start.

Another facet of the versatile characteristics of these natural gums is the control obtainable on viscosity. Assume we want to provide a Gum Tragacanth Powder which must test in the range of 7600/8000 centipoises in 1½ per cent solution on the Brookfield RVF, using spindle No. 4 at 20 rpm. Our first reference is the historical chart describing the viscosity ranges for all grades of Ribbons and Flakes Gum Tragacanth over the past five years. This chart is continuously kept current and does not go back further than the fifth year at any time. The grades of gum most closely in line with the range required are noted and, as is the case in most instances, no one grade can quite qualify. This requires the blending of two or more lots. At first the individual lots are milled; lot Y powder had a viscosity of 6550 cps., let us say, and lot Z powder ran 8700 cps. A series of combinations of these two are run until a proper percentage of each is arrived at which will produce the desired results. Experience bears out that the wider the discrepancy between two powders which are going to be blended, the greater the loss in viscosity on the actual blended results. For instance, 70 per cent of lot Z was blended with 30 per cent of lot Y. Computed on paper, this gave a result of 8085 cps., while in practice a reading of 7850 cps. was attained. This loss, referred to as the "paper loss," will increase in proportion to the degree of difference in viscosity between the two components.

After this laboratory blending, an actual production quantity is blended at the plant and checked throughout—the normal tolerance will be about one per cent—and the remainder of the blend is completed and checked, drum to drum.

In view of the scientific methods of grading, processing, and controlling the natural water-soluble gums, new interest has been generated in the research and production departments of those industries which can utilize their unique properties.

All the natural water-soluble gums have the common properties of forming viscous solutions in water,

(*Continued on page 845*)

Pharmaceutical Research Organization 3. *by Joseph Kalish, Ph.D.*

Shulton, Inc. is organized on corporate central staff and operating divisions basis, each operating division operating as an independent company with its self-contained units.

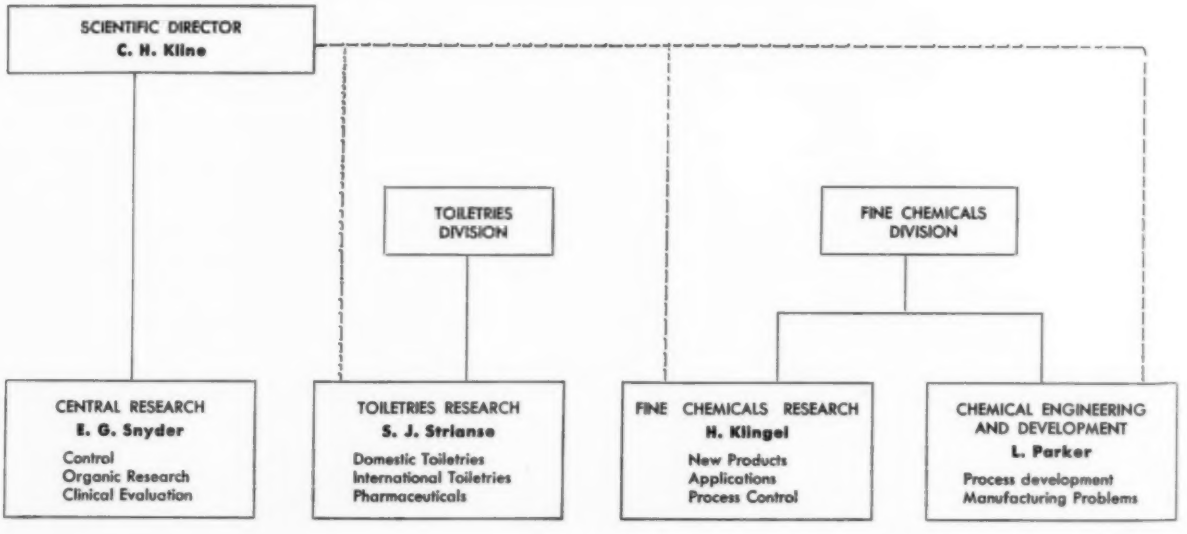
Divisions utilizing the scientific research function include the Toiletries and International Divisions, both served by Toiletries Research, and the Fine Chemicals Division, determining the research operations of Fine Chemicals Research and Chemical Engineering and Development. The Director of Toiletries Research reports to the Manager of the Toiletries Division and to the Manager of the International Division, depending upon whether the project serves the domestic or the export market, while the Directors of Fine Chemicals Research and of Chemical Engineering and Development report to the Manager of the Fine Chemicals Division. Included in Toiletries Research is the development of proprietary pharmaceuticals; when the Pharmaceutical Division is of adequate size, it will include its own research department.

Central Research is the corporate staff research department; it is headed by the Director of Central Research who reports to the Scientific Director. This department undertakes long range projects beyond the scope and facilities of the other research departments and supplies them with general services such as special analyses and clinical evaluation.

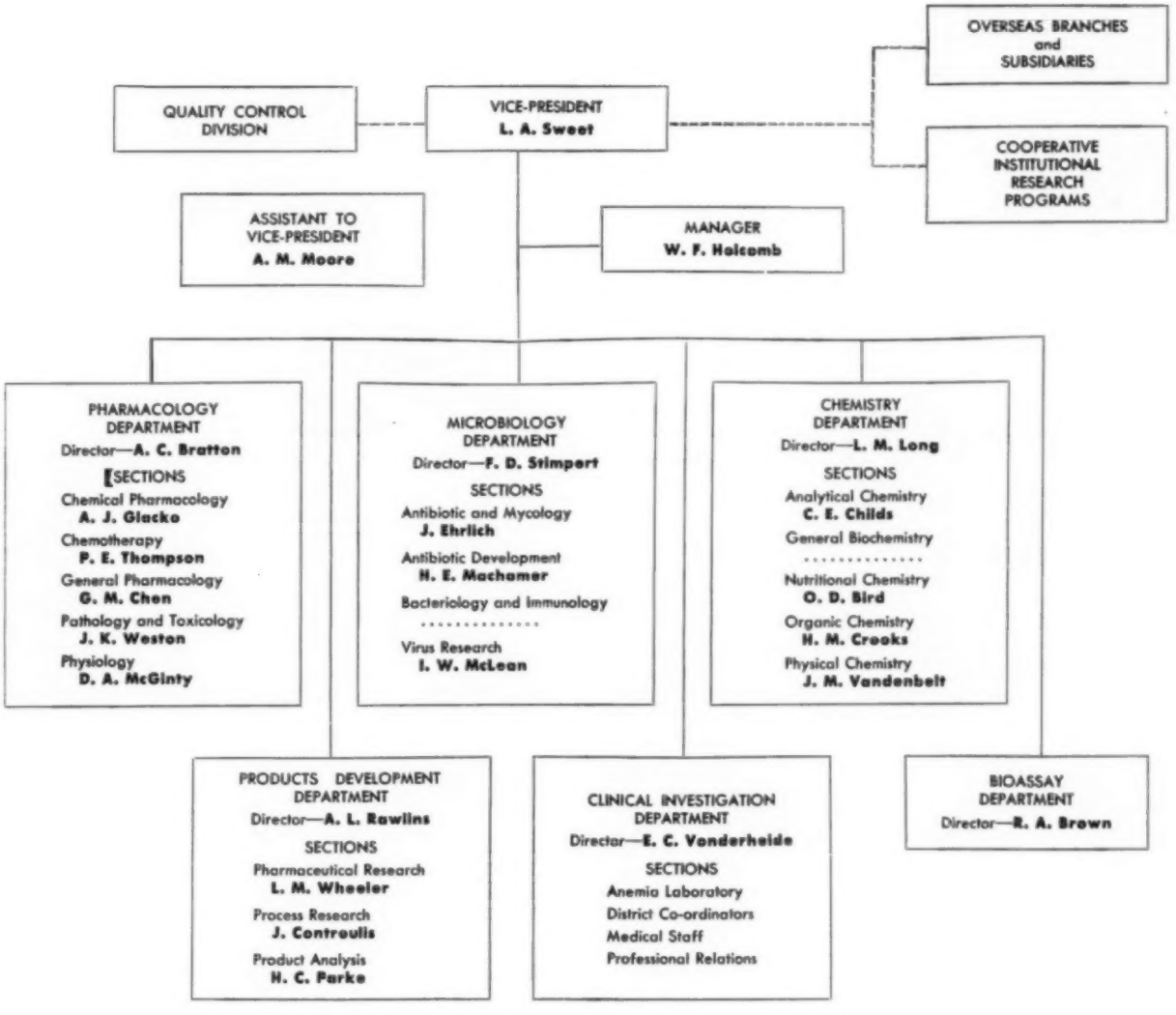
Research Directors report functionally to the Scientific Director who reports directly to the President of the company.

The Scientific Director combines administrative with scientific duties: he establishes overall research budgets and supervises the most effective utilization of the budgets; he evaluates and appraises research personnel; he coordinates the research program, allocating projects to the proper Divisional Research Department and acting as a clearing-house for the interchange of technical information. By outside contacts with scientific people and organizations the Scientific Director is expected to acquire useful data to be passed on to proper people; he is to act in an advisory capacity to Divisional Managers and Divisional Research Directors in scientific matters and overall he will determine that every product marketed by the company will be the best possible for the money and facilities made-available.

SHULTON, INC. Research



PARKE, DAVIS & COMPANY
Research Division



Parke, Davis Research expenditures have varied from 2.13 to 4.24 per cent of sales in the past 10 years. Tabulated by years, the figures are the following for research and development expenses in dollars and in percentage of sales: 1955, $4,662,000, 3.79 per cent; 1954, $4,514,000, 4.11 per cent; 1953, $4,656,000, 4.24 per cent; 1952, $4,314,000, 3.42 per cent; 1951, $3,312,000, 2.40 per cent; 1950, $2,686,000, 2.54 per cent; 1949, $2,392,000, 2.76 per cent; 1948, $2,171,000, 2,91 per cent; 1947, $1,834,000, 2.47 per cent; 1946, $1,413,000, 2.13 per cent. Clearly, not only has the absolute expenditure for research been increased in these years, but the trend includes relatively greater expenditures.

At the end of 1955, the company announced that it was planning to build a new Medical Research Center at a cost of approximately $10,000,000. The new structure is to supplement present research facilities; the new Center has been under consideration for several years and is the latest step in an expansion program involving the erection of new buildings and improved facilities in the United State, Canada and overseas. The company maintains research facilities in England in addition to the Detroit laboratories and supports fellowships in many major universities and research institutions.

Automation techniques in tablet coating

by Joseph Spaulding

Application of coatings to compressed tablets is a time-consuming, expensive production procedure which may require up to fifty individual coating operations. Considerable cost savings and improved coating quality can be achieved through such techniques as automatic controls and shock-free machinery.

Emplets, a Parke, Davis & Company sugar-coated tablet with an enteric coating that prevents dissolving in the stomach, requires the following coatings be applied to the compressed tablet: Two binder coats, four to ten coatings of enteric, and thirty individual coatings for the additional sugar coating. The sugar coating operation includes up to seven subcoats, ten grossings for building the tablet to size, twelve coatings of finishing syrup and one wax coating.

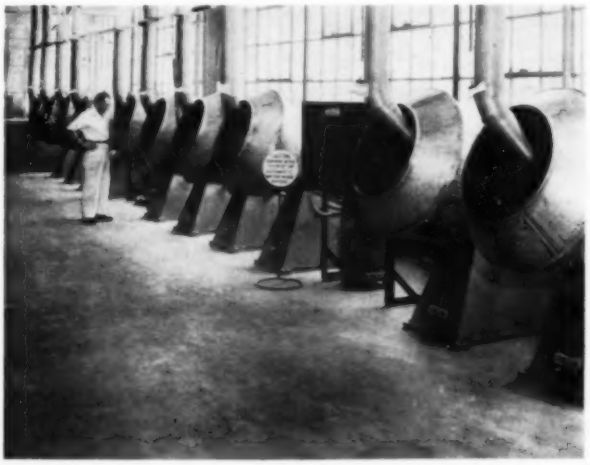
At an average production time in a coating stand of fifteen minutes per coat or dose, it may take from twelve to twenty-four hours to complete the coating and wax polishing of a batch of from 250,000 to 500,000 tablets. The common method of applying these coatings is to tumble the tablets slowly and continuously in a coating stand that has a pan rotating at a constant speed of about 27 revolutions per minute. Dehumidified warm air is directed to the pan duct-work to speed drying of the coated tablets as they are tumbled in the pan following the addition of the liquid coating material.

For the finish coating operation, the pan on the coating stand is jogged (stopped and started) for a drying-out process in which the tablets are delicately tumbled to provide a uniform finish coating before

the polishing operation.

This method of tablet coating offers several problems. The drying-out operation has required that several skilled coating stand operators manually control the jogging operation. Since the amount of jogging is left up to the judgment of the operator, a lack of adequate quality control exists in the finishing operation. Further, when a batch of tablets is being dried out near the end of a shift, the operation must be carried to completion, and overtime work is necessary to complete the process.

Gear-driven coating stands, which are started and stopped many times during the drying-out process, have had the detrimental operating feature of transmitting starting and stopping shock loads to the pan. This might cause chipping of the tablet coating, a factor that cannot be tolerated in the finish coating since small chipped imperfections show up plainly in a polished waxed tablet. Also, shock loads in gear-driven coating stands tend to shorten the useful wear



One side of a Parke, Davis coating room showing the automatic control panel for one of the batteries of four Colton coating stands.

life of the machine.

Parke, Davis & Company production managers and engineers solved all of these problems by applying automation concepts for the drying-out process to batteries of an improved design of tablet coating stand developed in cooperation with the Arthur Colton Company of Detroit. Nine batteries of four Colton fluid drive coating stands are automatically controlled from nine individual master control panels. Each battery of stands can be set for an automatically controlled drying-out "jogging" cycle.

In a typical jogging cycle, a pan on a coating stand will turn a portion of a revolution, stop, turn a portion of a revolution in the same direction and so on until the drying-out finish coating operation is completed and the pan is stopped. The amount of time the pan will rotate, the frequency of change of rotation and the total cycle time can all be selected for each battery of four machines by the operator who sets dials on their master control panel. Once the cycle start button for a particular battery is pressed for dry-out, the operator is free to serve other batteries of machines in which sub-coatings are being applied.

These automatic controls have the added advantage of permitting the operator to set them to complete a particular coating operation after he has left at the end of a working day. Thus, in addition to assuring the application of uniform coatings, the automatic controls increase machine efficiency.

Chipping and cracking of tablets are minimized on the batteries of new Colton coating stands, which have a unique 1-hp motor drive that includes a fluid coupling and a geared speed reducer. The fluid coupling in the drive enables a pan of tablets to be brought to speed smoothly. Similarly the coupling permits the loaded pan to slow to a smooth stop before starting again in a finish coating dry-out cycle.

When a 40-in. dia. galvanized coating stand pans are brought up to speed in sub-coating operations, the

Closeup view of one of the automated control panels. Dial adjustments are provided for cycle frequency, cycle time and total cycle.

controlled-slip features of the fluid coupling prevent pan slippage. Variation of the fill level in the coupling enables the speed of the pan to be adjusted to speeds between 23 to 27 revolutions per minute.

The final one-coat waxing operation is performed in another battery of Colton coating stands having canvas-lined pans.

The frequency, time and total cycle controls in the master control panel are adjustable to meet the dry-out requirements of the particular tablet and coating. These operating cycles are determined empirically. The number of gross coatings that build the tablet to size is determined by a size gaging operation in which the tablets are placed in a gaging vial and counted. Coatings are added until the correct count is reached.

Accurate records of master control dry-out settings as well as coating times and sequences are kept for each type of tablet and coating so that consistent coating quality is assured in successive production runs.

Development, Evaluation and Marketing of Shampoos

by D. H. Powers, Ph.D.
WARNER-LAMBERT PHARMACEUTICAL CO., INC.

Dr. Powers' study of the development of shampoos was covered, and his discussion of evaluation begun, in the November issue of Drug and Cosmetic Industry. Here is the concluding installment of his talk.

TABLE IV

Foam Height in ml Using 0.1 Per Cent of Active Material at 30° C.

	Activity	Foam Height 350 ppm Soft Water	Foam Height 350 ppm Hard Water
Potassium Coconut Soap	15 per cent	160	15
Sodium Lauryl Sulfate—Duponol WA	31 per cent	200	125
Sodium Monoglycerol Lauroyl Sulfate—Artic Syntex M	32 per cent	205	205
Sodium Oleic—Protein Condensate—Maypon 4C	35 per cent	175	155
Sodium Aralkyl Sulfonate—Ultrawet K	85 per cent	200	225
Alkyl Phenol Polyglycol Ether—Triton X-100	100 per cent	125	115
Sulfonated Castor Oil—Mono Sulph	68 per cent	35	35
Sec. Alcohol Sulfate—Tergitol 4	25 per cent	110	90
Sorbitan Mono Laurate Polyglycol Ether—Tween 20	100 per cent	85	80
Lauroyl Imidazoline—Miranol HM	40 per cent	220	120
Sodium Dioctyl Succinate—Aerosol OT	100 per cent	180	50

The original article in October 1951 issue of Consumer's Research should also be consulted as it also includes data on soap content, free fat and per cent ash. It is probable that a number of products have been changed in formulation and price in recent years so exact conclusions cannot be drawn.

It is probable that every advertising agency handling shampoos has conducted a consumer panel. In these consumer panels a known successful shampoo is compared with a new or different shampoo and users are asked to compare or rate them. According to the questions asked a wide range of comparisons can be made. However, as long as the shampoo that is the standard for comparison is not accurately measured, then these tests can give no accurate picture of shampoo performance but only a relative one. Then too, a consumer's opinion about foam, luster, cleanliness, manageability or ease of combing and ease of rinsing is only an indefinite one as she cannot measure it accurately.

In an effort to measure the foaming power of various shampoos and detergents of the type going into shampoos, Saunders[3] studied the height of foam (Table IV) produced under carefully-controlled conditions using one tenth of one per cent active material and measuring the amount of foam in soft and hard water. clearly, soap gives excellent foam in soft water and practically no foam in hard water and would not be a good shampoo under these conditions. On the other hand, sodium monoglyceride lauryl sulfate is just as excellent a foamer in hard water as it is in soft water.

Colsen[4] has suggested that this foam test could be made more practical by adding a hair oil to the shampoo to determine how much it cuts its action. They use a mixture of lanolin and petrolatum 1:1 with 38 parts of dioxane and then add 2-10 per cent of this mixture to the shampoo. The better the shampoo, the less its foam is cut by the lanolin-petrolatum mixture.

In a further effort to accurately measure shampoo performance, Barnett & Powers devised a Latherometer[5] to produce foam under controlled conditions. With this Latherometer they were able to measure the effect of sebum on the foaming properties of a shampoo (Table V). They made a synthetic sebum which closely compared to human sebum as analyzed by Mackenna in Investigative Dermatology[6]. Clearly the sebum present on the scalp and hair must effect the action of a shampoo. This study showed that the addition of two per cent sebum had some surprising effects on shampoo performance. In the case of a soap-type shampoo the foam was improved with the addition of sebum but in the case of many of the synthetics their foaming action was nearly cut in half. It is probable that in actual tests on the human head that oily scalp with high sebum content has an even more pronounced effect on shampoo performance. Harry[6] has pointed out that you "must apply shampoo to the head *twice* because you do not get good foaming on the first application." It seems more likely that some synthetic shampoos need two applications because the first application is needed to get rid of the natural sebum on the hair. The following table summarizes the effect of two per cent sebum added to an eight per cent shampoo (active) formulation in soft water.

*Presented before the Symposium on Perfumes, Cosmetics and Soaps at the 130th National Meeting of the American Chemical Society, Division of Chemical Marketing and Economics, September 20, 1956, at Atlantic City.

TABLE V

Effect of Synthetic Sebum on Shampoos at Varying Times

8 Per Cent Shampoo (As Is) (Soft Water)	Foam Volume (Ml.) 1 Minute		2 Minutes		3 Minutes		Per Cent Minutes	
	Control	2 Per Cent Sebum	Control	2 Per Cent Sebum	Control	2 Per Cent Sebum	Control	2 Per Cent Sebum
Synthetic	39	34	47	42	52	52	73	73
Synthetic	31	31	39	36	49	42	60	52
Soap-Synthetic	34	62	44	73	55	78	86	96
Synthetic	36	34	52	42	65	49	117	65
Synthetic	42	34	55	36	62	39	76	49
Soap-Synthetic	44	36	60	39	70	39	114	47
Soap	29	62	39	78	47	92	68	120
Synthetic	36	23	44	26	49	26	70	26
Synthetic	57	39	65	39	76	44	106	52
Synthetic	42	36	49	42	55	49	94	62
Soap-Synthetic	52	31	60	34	76	39	100	49
Synthetic	60	39	92	39	106	39	146	39

Foam volumes are given after several times of working to show the rate and persistence of the foam.

It is also true that human sweat which dries on the hair effects the activity of a shampoo. In Table VI the effect of one, two and three per cent of synthetic sweat is studied on the shampoo consisting of three per cent sodium lauryl sulfate. You will note that the sweat invariably reduces the foam volume. In this same study the effect of lanolin, mineral oil, polyethylene glycol and castor oil is also studied. These products are frequent ingredients in hair dressings and this work shows that they also reduce the foaming action of this shampoo. This study should be applied to any particular shampoo under study to show how seriously they cut its activity. The following table summarizes some of these data. Clearly the higher the foam volume, in any test, the richer it would appear as a shampoo. These tests were also run with soft water, as hard water would alter the values still further.

TABLE VI

Effect of Substances Frequently Found on the Hair on the Foam of a 3 Per Cent Sodium Lauryl Sulfate Shampoo

Per Cent of Substance	Amount of Foam Produced in 1 Minute	2 Minutes	3 Minutes	5 Minutes
Control	39	55	86	125
Synthetic Sweat 1 Per Cent	31	47	52	73
Synthetic Sweat 2 Per Cent	34	44	52	76
Synthetic Sweat 5 Per Cent	42	47	52	76
Synthetic Sebum 1 Per Cent	39	49	52	65
Synthetic Sebum 2 Per Cent	158	218	255	284
Synthetic Sebum 3 Per Cent	92	158	177	218
2 Per Cent Sebum—5 Per Cent Sweat	92	150	185	244
1 Per Cent Lanolin	39	44	47	55
1 Per Cent Mineral Oil (Light)	39	39	49	55
1 Per Cent Polyalkylene Glycol	39	47	52	76
1 Per Cent Castor Oil	34	42	47	62

As a further study of the effect of hard water on shampoo performance, twelve leading shampoos were prepared as dilute and strong shampoo lotions with hard and soft water. The hard water used was at 175 parts per million which many towns equal. It is interesting to note that a dilute soap shampoo looses all of its foaming action in hard water while a strong soap shampoo is still an excellent foamer in hard water. This is of course due to the fact that a soap solution is an excellent water softener and while some of the soap is used up as the softener, what is left gives an excellent lather. Table VII summarizes these data.

It should be noted that products with excellent cleansing action can be formulated which do not foam. However, at this time, a product which does not foam is not accepted as a shampoo. As we previously indicated a shampoo has been found to be a product with "some cleansing and foaming action which leaves the

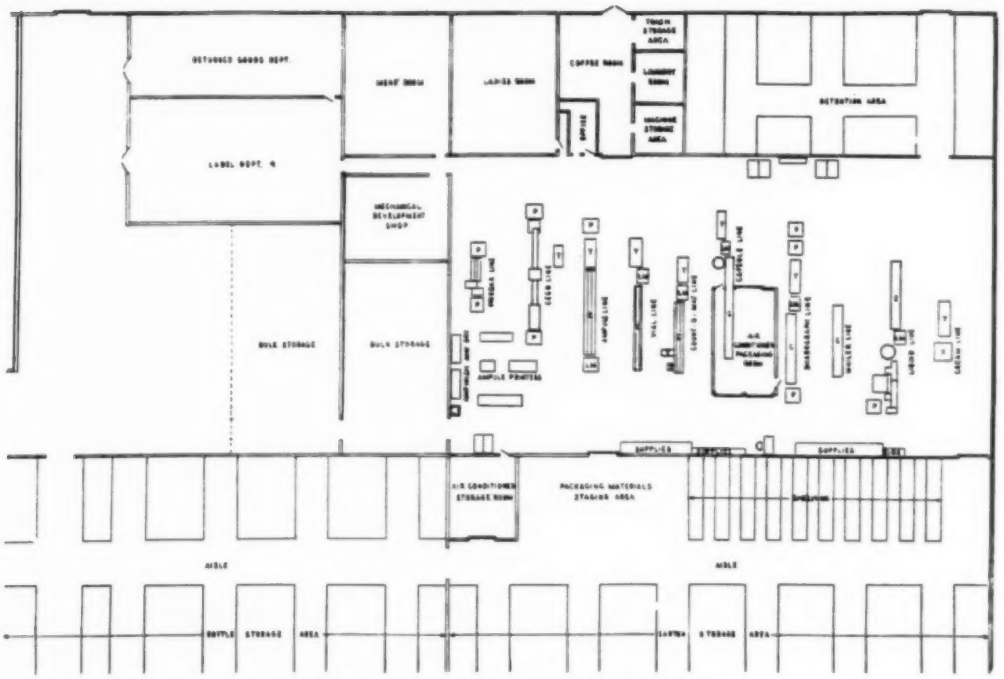
(Continued on page 849)

TABLE VII

Effect of Concentration of Shampoo on the Foam in Soft and Hard Water
Foam Volume (Ml.) 5 Minutes Plunging

Shampoo	0.5 Per Cent		2 Per Cent		8 Per Cent	
	Soft Water	Hard Water	Soft Water	Hard Water	Soft Water	Hard Water
Synthetic	83	49	68	86	73	96
Synthetic	73	29	73	39	60	62
Soap-Synthetic	62	26	120	83	86	96
Synthetic	76	23	106	60	117	109
Synthetic	96	49	162	65	76	86
Soap-Synthetic	76	26	52	44	114	65
Soap	87	0	78	52	68	90
Synthetic	103	47	114	83	106	78
Synthetic	109	29	155	78	94	106
Soap-Synthetic	60	13	62	65	100	62
Synthetic	68	70	114	81	146	106

SKETCH NO. 1



Packaging Dept. Layout, Schering Corp., Bloomfield, N. J.

Packaging Facilities*

by Edward M. Wixted,
INDUSTRIAL ENGINEERING MANAGER
SCHERING CORPORATION

The sole purpose of this discussion is to convey to you how dollars and cents may be saved through efficient layout of packaging facilities in the pharmaceutical industry.

I am sure that all of us have heard over and over again, the words: quality, quantity and cost. Throughout industry, wherever merchandise is produced, there must be some balance among these three factors. In the pharmaceutical industry quality is our business. Without quality, our industry would not have grown as rapidly as it has in the past twenty-five years and would not have acquired the excellent reputation which it enjoys today. Needless to say, quality is most important in pharmaceutical production and has a direct bearing on the layout of production facilities. Likewise, in order to have finished goods available for sale, quantity and capacity are important. Here, again, the pharmaceutical industry is unique because the high cost of active ingredients, inventory restrictions, the extremely large number of different sales packages and the wide variety of different sizes and shapes of containers result in a short-run, job-lot packaging operation where flexibility is a must.

Thirdly, in the pharmaceutical industry, we are constantly reducing our manufacturing and packaging cost by purchasing and installing new machinery and equipment. This dollars and cents approach to manufacturing and packaging costs assures us that we will be equal to or in advance of competition. Nevertheless, in ethical pharmceutical production, packaging costs are a relatively small part of the total manufacturing cost. Thus, although we are mainly concerned here with the layout of packaging facilities from the dollars and cents approach, and our layout certainly entailed a thorough cost study, quality and quantity (flexibility) had prime consideration in the decisions which resulted in the layout of our packaging facilities.

Our products include the new anti-arthritic "Meti" drugs, Meticorten and Meticortelone, Sigmagen, an analgesic for minor aches and pains, Coricidin cold tablets, Chlor-Trimeton, an anti-histamine, the male and female hormones, Oreton, Oreton M, Estinyl, Progynon, and Pranone and the sulfa drugs, Sulfacetamide and Thalamyd. From a packaging standpoint, this short list of products does not sound too formidable, but in our product line we have approximately 1200 different sales packages. These packages differ in product name, strength, container shape, label, insert, printed folding carton or shelf carton.

*18 Annual Forum of the Packaging Institute

This large number of different sales packages complicates the layout of the production lines because we must package 110 different containers varying in size from 1 cc. ampuls and 1/8 oz. tube to one gallon glass bottles. Likewise, the packaging lines are further complicated because we must handle the filling and packaging of ointments, creams, coated and uncoated tablets, powders and liquids, and the packaging of filled ampuls and vials.

I am going to discuss the layout of packaging facilities including detailed discussion on:

1. Plant Layout: a) Storage of packaging supplies; b) Staging Area; c) Storage of labels and inserts; d) Storage of bulk tablets, ampuls, vials and other bulk substances prior to packaging; e) Packaging Area; f) Packaging Lines; g) Mechanical Development Shop; h) Detention Area; i) Returned Goods Department; j) Locker Rooms, Wash Rooms and Laundry Room; k) Coffee Room; l) Office Area; m) Machine Storage Area; n) Trash Storage Area.
2. Services: a) Power; b) Lighting; c) Compressed Air; d) Air-conditioning; e) Flooring.
3. Materials Handling: a) Pallets; b) Lift Trucks; c) Electric Hand Pallet Trucks; d) Unscramblers; e) Conveyors; f) Labellers; g) Packout Tables.
4. Quality Control: a) Checking of supplies and bulk material at packaging line; b) Approval of first package on packaging order; c) Line Inspection; d) Roving Inspection; e) Detention Area.

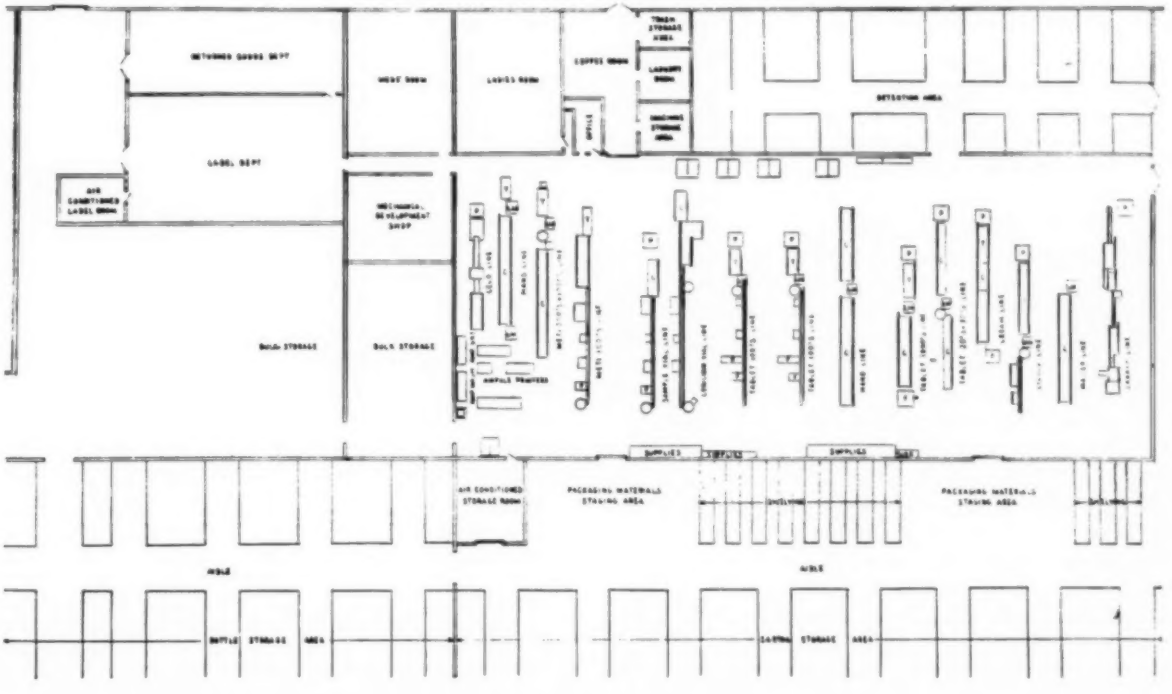
For this presentation, two sketches have been prepared. The first sketch shows the layout of the packaging lines and associated facilities when installed in the early part of 1951, and the second slide shows the expansion of these facilities during the period from 1951 through 1955.

The layout of the production facilities as depicted in Sketch No. 1, resulted from a pooling of ideas by the Schering Plant Management group. This layout effected a sharp reduction in materials handling costs; practically eliminated the time lost by operators traveling to and from the locker rooms, coffee room, and laundry room and the Packaging Department; gave us a good flow of supplies and materials into, through and out of the Packaging Department; and, in addition, resulted in good cost-control of both direct and indirect labor in the Packaging Department. The most important features of this plan will be enumerated by starting at the bottom of the slide and working toward the top.

In order to reduce the materials handling costs, we stored the large volume packaging supplies on pallets in the warehouse adjacent to the packaging materials staging area with a main traffic aisle in between. Also, on one side of the staging area we provided an air-conditioned storage room for storage of soft gelatin capsules and on the other side we provided wooden shelving for storage of individual printed folding cartons, shelf cartons and other small volume packaging supplies, excluding labels and inserts. This staging area was a most valuable asset because all of the packaging supplies which were stored in the warehouse were accumulated by order number prior to moving

SKETCH NO. 2

Packaging Dept. Layout, Schering Corp., Bloomfield, N. J.



the supplies up to the packaging line.

Now, as we move into the packaging area, we provided a 12 foot service aisle running along the wall for the full length of the packaging room. The packaging supplies were transported from the staging area along this service aisle to a temporary storage area at the head of the appropriate packaging line. As can readily be seen, the packaging lines were straight and varied in length from 20-35 feet with an average line speed of 20 containers per minute. Our packaging equipment consisted mainly of conveyors, pony labellers, tablet filling machines, a tube filling machine, a liquid filling machine and packout tables. Except for the use of these machines, all of our packaging operations were performed manually. Regardless of the fact that our longest line measured approximately 35 feet in length, we provided 60 feet from the 12 foot service aisle on the incoming side to the 12 foot service aisle on the takeaway side beyond the packaging lines. As our business grew, we found that we were able to increase production by installing high speed packaging lines in a length of 60 feet with the 12 foot service aisles at each end of the lines.

In order to provide the most functional operating layout, we provided engineering services as follows:

1. Over each packaging line we installed trolleys with outlets for 110 volt and 220 volt electricity.
2. The packaging area was well lighted by fluorescent lights which were installed in rows perpendicular to the length of the packaging lines with the rows spaced approximately 12 feet apart.
3. Compressed air was supplied to each packaging line by a manifold distribution system from a large air compressor which was located in the mechanical development shop.
4. In the initial layout we installed a small air-conditioned room in the packaging area. This room was subsequently dismantled so that the only air-conditioned areas were the storage area for soft gelatin capsules and the storage area for thermoplastic labels.
5. Throughout the entire building the flooring was made of reinforced concrete.

With the packaging supplies in temporary storage at the head of the packaging line, what other materials and supplies were needed before we could proceed with the packaging operations? We needed the bulk materials and the labels and inserts. All of the ampuls, multiple dose vials, stripped tablets, and bulk tablets were stored in the bulk storage area and were moved, on order, to the head of the packaging line on pallets via an electric lift truck. Liquids and creams were compounded in the pharmaceutical compounding department in a building at a distance of about 500 feet from the packaging department and were transported to packaging in stainless steel transfer tanks. In like manner, the labels and inserts were stored in the label department adjacent to the packaging area. The labels were coded in advance and the labels and inserts were transported in small boxes to the temporary storage area at the head of the packaging line.

Also adjacent to the packaging area, we built a mechanical development shop which was equipped with a drill press, a shaper, a lathe and other small machine tools which were used by the packaging mechanics in making jigs and fixtures and change parts. In addition, the change parts for the packaging machines were stored in this area.

At the packaging line, the packaging supplies and bulk material were checked against the packaging order and the packaging specification sheet by the forelady. Likewise, the forelady assigned the operators to the line as indicated on the routine layout sheet. This layout sheet was prepared by the industrial engineering department and showed the standard packaging rate as well as all of the operations which must be performed in order to complete the packaging of the particular product. Then, assuming that the line had been setup by the packaging mechanic and that everything was in good working order, one complete package was processed through the line. This package was submitted to the foreman who checked the bulk material, label, batch number, and all packaging supplies against the packaging order and packaging specification sheet. Provided that everything checked accurately, he initialed the packaging order and packaging began. On each line, one operator was responsible for inspecting the package before it was packed out. In addition to all of the quality control and inspection checks which have been enumerated herein, we had a roving inspector who moved from line to line throughout the day. It was her responsibility to check all of the component parts of the packages, the bulk material, tablet counts, quality of finished packages, etc.

To further complicate our layout problem, we packaged both released and unreleased bulk materials. This caused us a considerable amount of difficulty because finished goods were not delivered to the Shipping Department unless they were accompanied by a delivery to finished stock notice which was the official notification that the finished packages were available for shipment. To overcome this difficulty we made provision for a detention area. Thus, when the packaging order was finished and the delivery to finished stock notice was prepared, the delivery notice *for released materials* and the finished goods were forwarded to the detention area where they were checked and transferred immediately to the shipping department. *On unreleased materials*, the delivery notices were impounded in the packaging department and the finished packages were moved to the detention area where they were impounded until the delivery notices were certified by the quality control department, at which time the delivery papers and the finished goods were transferred to the shipping department.

After the packaging order was completed, the usage of bulk material was checked against the number of

(Continued on page 851)

the 'BAN' development story... Product, People, Planning*

by Richard K. Van Nostrand, ASSISTANT ADVERTISING DIRECTOR, BRISTOL-MYERS COMPANY

Ban, the new lotion deodorant that rolls on is a success story. It's a story of a coordinated effort by many people. It incorporates all the essentials of an idea, the ultimate execution of that idea, and lastly, and probably most important of all, faith in that idea. Don't underestimate the latter because as I go over the past history of this product, you'll see just how much faith was needed topside at Bristol-Myers to keep hammering away until the right product was ripe for marketing.

The story really begins in 1948 when, at a joint meeting of the various department heads, it was resolved to make an active research project for an entrant into the antiperspirant field. Several months later an excellent antiperspirant product called Mum Lotion was evolved. Initial use tests looked promising and a sales test began in Texas built round the general theme, "Three Pink Drops and Odor Stops." This was basically true, but when that hot Texas sun got to working on some of the product, it thickened to a point where you needed a junior-sized hammer to get at those "Three Pink Drops." Subsequent lab work licked this problem, but it was felt that although we had a good product, its method of application was no improvement.

The search for this method of applying this lotion continued while the product itself waited. Early in 1951, the ballpoint principle came to the fore allowing the lotion to be rolled on. It looked like the answer to a maiden's prayer. Mum Rollette was hastened into six major markets, got initial good retail and consumer reaction, but then catastrophe struck again. Despite considerable laboratory work, time caused the active ingredients to make a differential in the expansion of the different plastics used for the ring and the marble. Thus we had some wonderful lotion on the inside and the marble would not turn sufficiently to apply that lotion. Again we ground to a standstill and the general feeling was somewhat akin to that delightful cartoon in the New Yorker, "Well, back to the old drawing board."

We took a lot of good natured ribbing from all sides and some of the comments on our predicament were choice. Here again faith had to take over and the packaging and product planning groups took off again

on a seemingly never-ending search.

On the surface, it looked simple. Comments both then and now generally are in the vein of, "Why hasn't someone thought of this before?" Herein lies a tale, one which took another year to solve.

This was basically a precision instrument that had to be mass produced. Tolerances of 3/1000's of an inch are not common in products that sell in millions of units. The clearance between the marble and the ring had to be maintained regardless of heat conditions and reaction to the active ingredients within the product itself. It took 480 combinations of different plastics before our labs came up with the right solution of two compatible plastics that would do the job. Every hurdle seemed more and more imposing.

The problems that arose over the marble itself caused considerable greying of the hair. Every known manufacturer of ball bearings, marbles, etc. was contacted and ultimately threw up his hands. They just couldn't make plastic marbles to the necessary tolerances. At long last, one operation in an allied field was located where a theoretical way of handling the product was proposed. After sufficient research, we

*Presented before the Commercial Chemical Development Association, Nov. 1, 1956, at Cincinnati.

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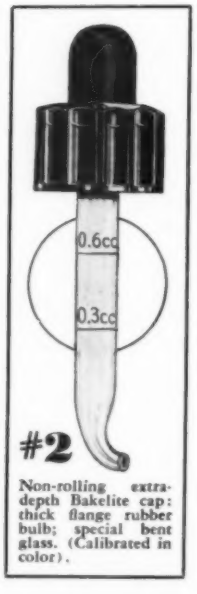
We can make up dropping parts to fit your own bottles or we can supply bottles in an attractive modernistic style in Amber, Blue, Green, or Clear glass, complete with dropping parts, in the following sizes: ⅛, ¼, ½, 1 and 2 oz.

• • • • •



#2

Non-rolling extra-depth Bakelite cap: thick flange rubber bulb; special bent glass. (Calibrated in color).

Write for Samples and Quotations

PENNSYLVANIA
GLASS PRODUCTS CO. INC.

"Glass Goods of the Better Kind"

430 N. CRAIG ST. • PITTSBURGH (13), PA., U.S.A.

were convinced that these people could do the precision job necessary and literally put them into the plastic marble business. Constant vigilance on maintaining these tolerances has been of the utmost importance. The precision and know-how that goes into the making of these marbles would make a fascinating story all its own to technicians and laymen.

Another prodigious problem was the cap. We set requirements that plastic people just shook their heads at. This cap had to be precise enough to make a perfect seal, clear enough so the inner workings could be readily seen, resilient enough to withstand countless torque pressures in turning the cap on and off, and elegant enough to top off a package designed to look appropriate on any boudoir table. It took precious times, but it was ultimately done and we ended up with a patentable package that looked like it was ready, willing, and able to go to market.

This time, however, after frankly jumping the gun somewhat on previous tests, early in the Fall of 1953, we decided we'd have to know whether the public really wanted such an item as Ban. First, we screened our own national consumer panels and determined who were users of cream or spray deodorants. To make the test as tough as possible, we took the leading cream and tested Ban against it among cream users and did the same among spray users. Thus we were testing against an already prejudiced segment of the market as opposed to the market in general. The results were so outstanding that we felt something must be amiss, so we went to an outside national panel to have a similar research job done. Again, the results were terrific and we knew we had a product that at first blush was a hit.

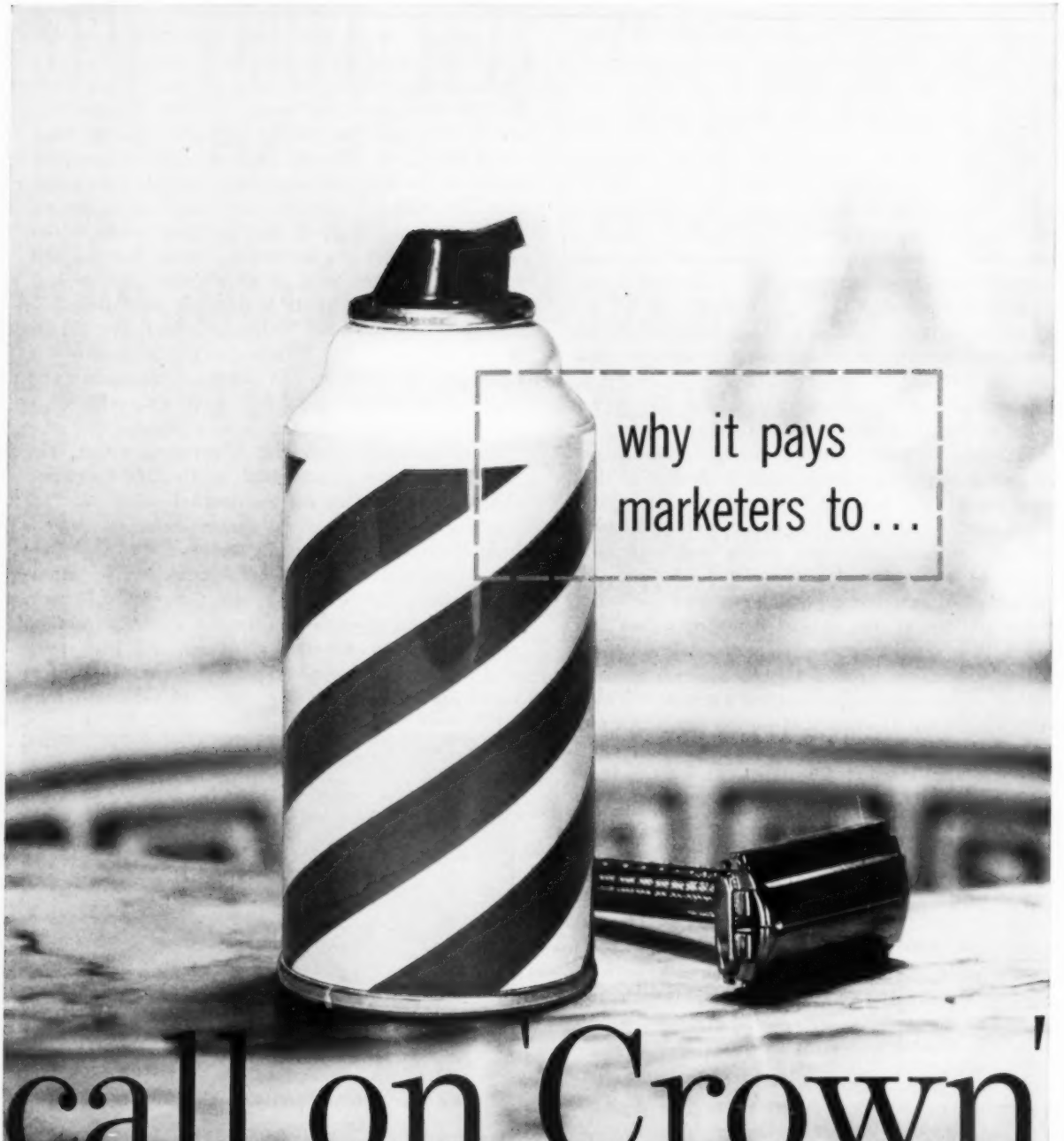
By this time it was early 1954, BBDO had been appointed to handle the product. We immediately put their panels to work to try to determine the fatigue factor, if any, and to what degree people would come back into the fold for repeat purchase. The results again were good and the repeat pattern was even more than we had hoped for. The time was ripe to roll.

In the meantime, as far as advertising was concerned, we had been working feverishly on copy, layouts, media, etc. There were two quite opposite schools of thought concerning the best method to approach the public, one using the roll-on gimmick and the other an overall approach. We selected two towns, Madison and Toledo and inserted split runs using these two different approaches three months before the product was marketed. The copy indicated that Ban was not yet available, but that its strong points were as indicated. Buried fairly deeply in the copy was an offer of a bottle for a dime. We had had a good sized office pool in which many people had gently placed fifty cents in the pot and picked a winner. The results, 703 for the ad on your left, 701 for the one on your right. Needless to say, all money was returned. We knew we had two good approaches and incorporated factors from both ending up with what all concerned felt to be a corking good ad.

Simultaneously with the advertising effort, the Market Research groups both at Bristol-Myers and BBDO were working on test markets for the initial introduction. We wanted diversification both geographically and economically and ended up with four fairly scattered marketing areas, Jacksonville, Madison, Toledo, and Johnstown with store audits in each.

The Sales Department in the meantime had worked out a closely coordinated campaign to insure quick and adequate coverage in these four areas. Task forces involving both home office and field personnel were

organized to blitzkreig these areas in short order. After setting up the Johnstown meeting, I headed for Jacksonville to work with that crew. We organized six strong, divided into territories, and, after several years layoff, I found myself carrying a bag and was reconvinced that a good salesman earns his pay. When we met back at the hotel after our initial day's work, the story was pretty much the same, good reception and retailer opinion that with the TV and newspaper effort planned, Ban would move. It was noted by all that the dealers seemed to be fascinated by the marble and kept working it while the sales pitch was going on. The suggestion was made that each of us take the contents out of one of the bottles,



Spra-Tainer, the first "throw-away" pressure package, set new standards of design efficiency and convenience.

The extra strength of Spra-Tainer gives marketers a wider choice of propellants. Unique "no side seam—no top seam" construction permits uninterrupted inside coatings for best product protection. Crown's "wrap around" lithography gives marketers that vital extra spark at the point-of-sale.

Crown also provides authoritative facts on the adaptability of a product to pressure packaging . . . on pertinent Government and ICC regulations . . . on propellants, valves and contract loading facilities as well as the loading equipment itself.

You will find that this "one company responsibility" in pressure packaging pays real dividends when you . . . *call on Crown.*

CROWN CORK & SEAL COMPANY, INC., PHILADELPHIA 36, PENNA.

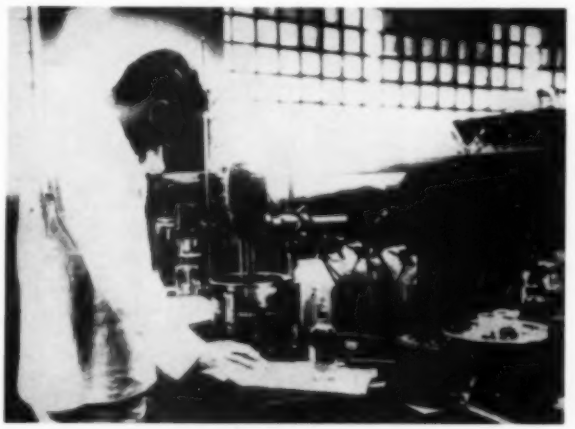
give this empty to the dealer and let him fool with it to his hearts content while the order was being written. It worked beautifully, so much so that our Southern Division Manager made this priceless statement, "I'll be damned, in 28 years of selling, this is the first time I threw away the product and sold the package."

We obtained excellent distribution in all four markets and the advertising broke a few days later. There were lots of anxious moments until some most encouraging reports started to come in. The critical test would come after the advertising slackened and the inevitable slowup that would follow. We didn't have too long to wait as the repeat factor started to take hold and sales moved up again nicely.

Naturally we were elated. Our blitzkreig had worked. The next question then became, how well will we do in areas where normal sales effort is maintained rather than the use of a task force. Three cities were chosen, Pittsburgh, Cleveland, and Columbus, the latter two former Mum Rollette cities to see if any negativeness was present due to the failure of Ban's predecessor. It was now September in 1954 and armed with facts, figures, and a wonderful product, our local salesmen started out. It took more time to get the distribution for obvious reasons, but again the results were excellent. The time had come to decide how and when to expand into other areas.

Late in November, the final decision for a simultaneous national introduction was made with sales meetings to be held in January. A good deal of experimentation had gone into the seven previous test cities so when this sales brochure was put together, all the bits and pieces fell into place nicely. At each of these regional meetings, all data, maps, etc. were personalized so that just the areas involved were shown rather than having the emphasis on the national picture. The meetings were most successful and it was of great interest as we went from one meeting to another to note the changeover from the beginning to the end of the meeting and watch the facial reactions go from, "Oh no, not another deodorant" to one of "By God, we've hit the jackpot this time." And, they were right.

Initial shipments had been set up for February 15 so that a key account coverage was a must to be followed by as rapid an expansion as possible to the other outlets. There was one further complicating factor and that was that Ban was a hot item in department stores and these too had to be covered by men not too familiar with this type of operation. It is to the extreme credit of our sales force that when we broke advertising on March 14, A. C. Nielsen showed us having an effective distribution of 73 per cent which grew in the next two periods to 89 per cent. Ban was available. The next question then became whether this planned advertising and publicity would motivate sufficient quantities of merchandise to be



moved to justify the initial investment that was already in the hundreds of thousands of dollars.

Before delving into the advertising program, I'd like to touch on one other facet of this overall program, that of product publicity. This new type of application was real news and I'm certain you're probably familiar enough with this type of operation to know that women's and shopping columns, commentators, etc. are always on the prowl for something new to talk about. Through BBDO's Publicity Department, we got breaks on every major news service, were incorporated into countless radio and TV shows and got product pictures and stories into many of the leading magazines and supplements. Publicity-wise, Ban was on the map.

One point is worthy of mention at this point. In order to tie together all the marketing elements of Ban, *we* used the symbol of the exclamation point. It was used in our print advertising, the label and point-of-sale material. Again for consistency, we have used the same model that is currently appearing in our print campaign on the rear of the new boot.

This was our original campaign for Ban. It ran unchanged for many months. Currently, we have changed the background key of the ad somewhat, but there is a definite similarity between it and its predecessor. Plans call for the continuation of this basic

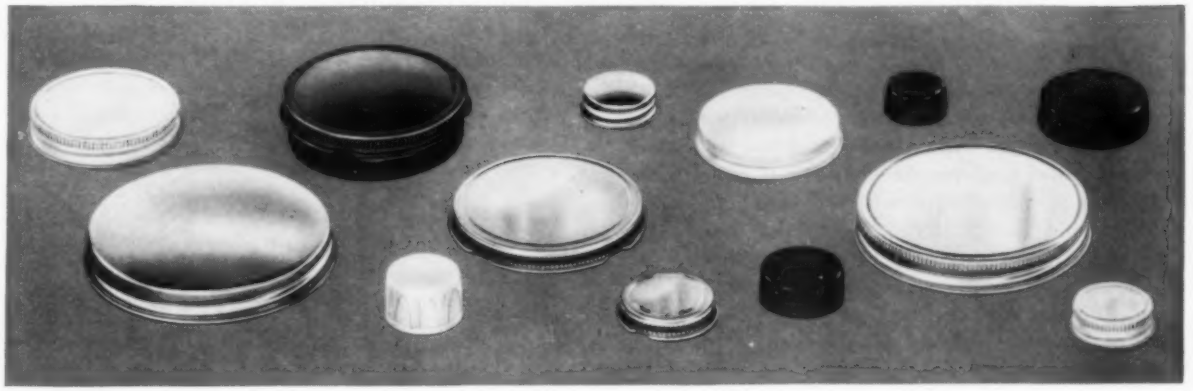
(Continued on page 853)

CONTROL IS

ALL-IMPORTANT

with Anchor Hocking!

Regardless of what you pack Anchor Hocking makes an Anchorglass container in a style, size and color to most attractively, efficiently and economically package it. And, to seal your glass-packed products, there are Anchor molded screw caps and metal screw, lug and vacuum types available—one or more of which will completely satisfy your diverse and specialized requirements.



THE controls applied throughout your production and packaging operations are all-important to you. By the same token, the manufacturing controls employed by Anchor Hocking are very important to you, also.

Anchor Hocking exercises literally hundreds of exacting controls, tests and checks daily in the manufacture of its glass containers and closures. From the selection of all raw materials used to the final inspection, every operation is under meticulous control.

And all of this control, involving highly trained chemists, bacteriologists, engineers, other technicians and personnel, is done but for one reason. And that is, to provide you with uniform, high quality, dependable Anchorglass® containers and Anchor® screw, lug, vacuum, metal and molded closures that will give you high-speed, dependable production and protection.

ANCHOR HOCKING

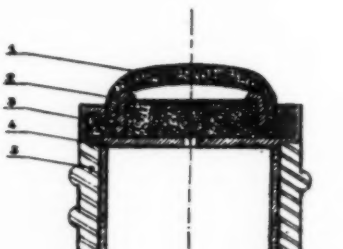
GLASS CORPORATION *Lancaster, Ohio*

NEW APPLICATOR
Package of Convenience

Convenience-of-use in a package being singularly pertinent to the drug and cosmetic industry, the development of a new type of controlled flow applicator for liquids and semi-viscose materials is likely to be of interest to manufacturers of such products as deodorants and anti-perspirants, colognes, lotions, before- and after-shaving preparations, depilatories and liniments. Developed and patented by Dab-O-Matic Corp., 15 West 44th Street, New York 36, the unit is made of polyethylene and has a reservoir with a transfer inside which carries about six applications, making it unnecessary to invert the bottle as with the ball applicator.

The top membrane and inlay of the Dab-O-Matic are made of a specially compounded plastic foam which is inert and sterile and compatible with essential oils, alcohol, aluminum salts, and other deodorant and anti-perspirant formulation, according to a statement by Dab-O-Matic's Sam Schwartzman, who also has said that leading manufacturers and private label companies in the industry have approved the applicator.

The inside of the urea cap is molded with a bead which fits around the rim of the applicator, thereby assuring a perfect seal and no evaporation. Since the unit works on the principle of capillary and vacuum action and the top must be touched to release fluid, leaking is prevented. To start the flow, the user presses the top membrane firmly two or three times; thereafter, it flows freely. Dab-O-Matic states that it can control the flow and release of the unit and can suit the rate of flow to the requirements of the cosmetic or pharmaceutical.



Principle and function of the applicator are illustrated in the drawing: (1) top membrane, (2) inlay and reservoir, (3) aperture, (4) polyethylene plug, (5) bottle-neck fitment.

By depressing the top membrane and contacting the inlay, the fluid is extracted from the reservoir and a vacuum is created so that the inlay, by suction, again absorbs liquid from the container and refills the reservoir. Quantity of liquid taken from the reservoir is limited and controllable by the thickness of the inlay, the size of the aperture, and the distance between the inlay and the membrane.

Packaging and Selling

Handling Salesmen

There is a tremendous variation in company policies in regard to salesmen's reports. Some companies literally weigh down the salesmen with endless report forms which require an hour or more of tedious work at the end of every day's selling time, while others literally turn a man loose with practically no supervision. This industry has many examples of both kinds with almost every possible variation in between.

We like the way Pierre Harang, Vice-President and Director of Houbigant Sales Corporation and President of the Toilet Goods Association put his philosophy before a group of post-graduate students at the Amos Tuck School of Business Administration, Dartmouth University.

According to Mr. Harang, "Salesmen are always right—until proven wrong—and the Honor System is the best way to handle salesmen.

"For close to thirty years, when I first assumed Sales Managership, I had steadfastly refused to think in terms of daily or weekly Salesmen's reports of calls; sales quotas; contests; prizes; traveling and entertainment expenses.

"My philosophy is that a salesman is a businessman. That as such, he should be, as far as his trade is concerned, the boss of his territory, whether it be $100,000 or $500,000. That he should know best how to work his accounts within the definite general restrictions and rules imposed by his Management. That he should have no interference from the office, whose primary function is to help him to secure the business rather than to criticize him. That as far as customers are concerned, his decisions stand.

"Strange as it may seem, the Sales Manager or the Promotion Manager or the Advertising Manager of my company cannot make deals or arrangements with the most important customers who visit our office without the salesman's approval. Even an order for new merchandise, if taken at the office, must be referred to the salesman before shipment.

"To me, requesting salesmen on the road to forward daily or weekly reports of calls, with comments as to why a dealer did or did not purchase, is below the dignity of both the employer and the salesman.

"If you start from the principle that you have hired the best man for the job, do not give him the opportunity—indeed, the incentive to lie.

"As a matter of example, what will a salesman do who happened to spend five hours on a sale and hence could make but two more calls that day? Do you think that he'll give all the reasons for the necessity of spending five hours on one visit? Of course not, because he knows too well that the people at the office would smirk. Rather, to prevent any argument, he will list five extra calls to make his report look good to a $100-a-week employee who might look at it at the office.

"For basically the same reason, I do not believe in a system of salesmen's remuneration which incorporates payment of expenses for traveling or entertainment—at least in the field I am in.

"I know of nothing that can create an "Iron Curtain" between headquarters and field men to the extent expense accounts will. Further, expense accounts are the biggest incentive to cheat ever devised and even the most accurate and honest reports will be questioned by office people, who believe that they will increase their own personal standing by questioning their validity. And I can assure you, that I know of no correspondence which will cause greater irritation, unrest and affect morale than that on the subject of expenses. A sales manager, if he's worth his salt, should have a pretty good idea of the minimum amount of expenses a man will have, to work a territory properly. Let him increase the salary the man is worth by that amount and explain to him that if he is the business man he thinks he is hiring, he will know how to budget himself properly. That's what I call the Honor System.

"And I have no patience with Sales Managers who insist on quotas; preparation of route lists; contests, prizes and the like, which necessitate no end to bulletins, to correspondence, to explanations, because the first thing a salesman looks for is that which he considers unfair to him in that contest and the quota that has been assigned to him.

"If you need a quota to prod a man, it's your own fault. You haven't hired the right man.

"To sum up what I've said, I know of no better way to handle salesmen than the Honor System. If it works, you secure the two most important ingredients for a successful sales organization—Loyalty and Morale."

Juicy Non-Foods

According to the president of a leading supermarket, in a business session at the annual meeting of the National Association of Food Chains: "The 'arithmetic' of non-food expenses is not quite as rosy as it appears at first glance. "However, "The most I can

Thinking

Insecticides
47,232,131 Units

Room Deodorants
32,110,180 Units

Other Personal Products
14,220,783 Units

(perfumes, colognes, shampoos, personal deodorants, sun tan oils, hand lotions, etc.)

Paints
7,723,368 Units

Let General Chemical help you get

Here is your shortcut to aerosol marketing:

Capable Contract Fillers

You don't have to invest a cent in plant, special equipment or personnel! There are many capable Contract Fillers throughout the country who will put up your product in aerosol form for test marketing . . . or sustained volume production.

These Contract Fillers offer a wealth of accumulated experience that is invaluable to the new aerosol marketer. And General Chemical stands ready to supplement their service with helpful market data . . . with expert technical assistance in formulating your product in aerosol form . . . and in providing the right propellant for your product.

Here are the right propellants for every aerosol need:

genetron®
AEROSOL PROPELLANTS

deduce from all the evidence is that the potential markup is handsome enough so that with just a mediocre job the rest of the way, there is a pretty good chance of coming out on the plus side."

The way we read these statements is that while this food chain head does not think that non-food items is quite the untapped gold mine that it used to be considered, nevertheless, the margins are juicy enough compared with food to either let it ride on its own without too much effort on the part of the store, or to use the non-foods as a store football with plenty of room left for a modest profit.

Here are some other items from this talk.

The number of non-food items handled has increased 2 2/3 times to 1,875 items.

Only "moderate gains" were reported for health and beauty aids, cooking utensils, kitchen tools, magazines and picnic equipment.

There was a "marked stabilization" in paper products, hosiery, hardware and soft goods.

Drug departments, including toys and notions in addition to health and beauty aids, have almost doubled, with sales up from 1.3 percentage of store volume to 2.48 per cent. Highest percentage recorded was 10 per cent by supermarkets operating complete drug departments including prescription service.

Copy Ode

In the classical and traditional method of introducing a perfume there is always a challenge to the advertising copy writer to describe that most intangible and illusive of all merchandise. Normally this description varies in monotony with a repetition of the words that have been used again and again in perfume vocabulary.

We think, however, that in introducing their new perfume, Ode, Guerlain has come up with a poetic description of this new perfume that makes mighty fine copy. We submit this copy here for the edification for those who are condemned to write for more prosaic products.

Like the memorable depths of poetry,
ODE is a perfume that
appears, on first encounter,
flowered—light—deceptively young
. . . . yet . . . with the recall of a poem's
ringing phrases, it lives on to repeat
for moments without end
the subtle provocation of its scent,
majestically, commanding, insistent.

National Advertising and Distribution

In a recent speech at the annual convention of the National Association of Retail Druggists James Hill, Jr., chairman of the board of Sterling Drug Inc. said, "pre-sold, fast-selling brands produce 'more profit per dollar of investment in inventory and display space than any other merchandise." Mr. Hill also made the point in this talk that U. S. drug stores can compete most effectively against non-drug retail outlets with drug departments if they "profitably merchandise" their valuable display space with nationally-advertised brands that "sell on sight."

It seems to us in our casual excursion in the various grocery supermarkets that all we see on the rack jobbers display stand or in the stores own health and toiletries departments are the nationally-advertised brands that "sell on sight." Also, in reading the various speeches of supermarket operators we notice their repeated statements that they are not interested in any product from this trade unless it does sell on sight and also that they are very keenly interested in any nationally-advertised product which reaches a worth while sales volume.

One of the very serious problems of national advertising today is whether it pays to spend a great deal of money in advertising in order to attain an important consumer response and then to restrict distribution.

It seems to be the result of all marketing that successful national advertising breeds a further expansion of national advertising and this expansion of national advertising inevitably forces an expansion in distribution.

Poodle Pin Tooth Paste

For some years now we have been fascinated with the toothpaste branch of this industry. Not only have the people producing this product shown the most fertile imagination in product research, but they have certainly established firm leadership in that most wonderful of all American extravagances, that is package merchandising.

No it must be admitted that the tooth paste people are supurbly surpassing all previous records in creative imagination.

For instance, Lever Bros. as a notable product of their research laboratories is introducing a tooth paste that comes out of the tube in pink and white stripes looking and tasting like peppermint candy. Evidently this is destined to become another tooth paste homerun because reports from Lever Bros. are that sales tests are "phenomenal."

In accordance with tooth paste tradition none of the manufacturers are standing still. The second to display the new model for the current race is Pepsodent, who is introducing two colorful tooth paste and brush displays in a fall premium promotion. With this promotion is tied in a nationally advertising send-away offer of a $2.50 value mink-trimmed French, gold-plated poodle lapel pin for 50c plus the end flaps of a Pepsodent tooth paste package or the band on the 59c tooth brush vial.

We immediately submit this industry for the industry prize in imagination unlimited in advertising and promotion. At the very least, no other industry has yet come up with a mink-trimmed gold-plated poodle lapel pin as an inducement to purchase a utility product.

Alert Research

We often hear the remark today that a business must be alertly research minded or fall by the road side. Just to show how implicitly the research people themselves believe that this is true, we have just heard that the research director of one of the great corporations associated with this industry, who is reported to have earned $75,000 a year, has just resigned his

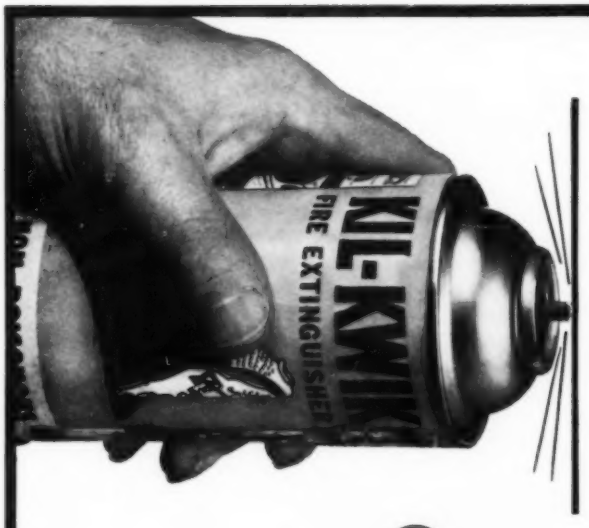
Here's a big market . . .

and the valve

to do the job best!

Schrader®
ESTABLISHED IN 1844

AEROSOL VALVES made by the
manufacturer of the Standard Tire Valve since the first Automobile



FIRE FIRE FIRE

NOW! SCHRADER ONE SHOT VALVES

1 STRIKE OR PRESS TIP AGAINST HARD SURFACE . . .

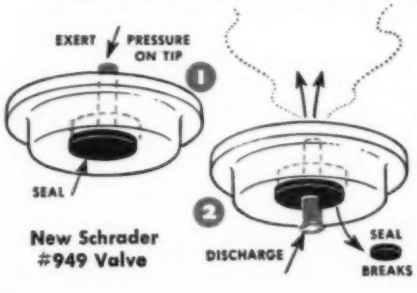
2 AND AIM CAN DOWN AT BASE OF FLAMES

FOR FIRE EXTINGUISHERS

Get into the growing home fire extinguisher market *fast* with Schrader. Order the single-discharge valves you need . . . now. Absolutely non-clogging, positive action of the plastic valves makes them practical for your mass selling. Gas-tight feature of valves makes your fire extinguisher safe to store, handle. Schrader is a leading name in Aerosol valve field. Depend on Schrader for economy and good service.

Schrader®
ESTABLISHED IN 1844

AEROSOL VALVES made by the manufacturer of the Standard Tire Valve since the first Automobile



New Schrader #949 Valve

MAIL THIS COUPON TODAY

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated Dept. DC
470 Vanderbilt Avenue, Brooklyn 38, N. Y.

Please send me samples of Schrader one shot aerosol valves ☐ Price list ☐

Name_____ Title_____

Company_____

Address_____

DEPARTMENT OF TECHNOLOGY
BUFFALO AND ERIE COUNTY PUBLIC LIBRARY

position as research director on the basis that the company he worked for did not give him proper support in technological development.

Diminishing Television

If you can believe the Richmond Times-Dispatch and the Richmond News Leader in their bulletin, "The Advertising Odds on Television in Metropolitan Richmond," the chances are mighty slim. After studying this booklet, we inclined to be pretty sorry for television if the newspapers in America take this cue to carry this attack in a nation-wide campaign.

As a matter of fact, the analysis is quite convincing.

The data was obtained by a coincidental telephone survey conducted by an independent research agency with trained interviewers.

In a systematic random sampling 4,141 calls were attempted of which 3,704 affective calls equal to about one out of every 20 telephone homes in Richmond area were completed. This is certainly a large sampling in line with modern market research methods.

Now for the analysis. Working wives, shopping trips, social visits, club meetings, bridge games, movies: all these and other factors take a heavy toll in absences from the home. For this reason, in the telephone calls, the potential audience for television was, at the beginning, reduced to only two-thirds of the homes in the area. This brings the potential down to 66.7 per cent of the homes.

One-tenth of all households have no television set. This further reduced the potential on the calls down to three-fifths of all households or 59.5 per cent.

Of the families at home, with a television set, only one-fifth will have the set turned on—as an average—throughout a fourteen hour week day. This cuts the potential audience to one-eighth of the number of the households or 13.4 per cent.

In one-tenth of all households with television set on, the set is either turned to an out-of-town station, or to a station that cannot be identified. This reduces the listeners to the local Richmond station to 1.0 per cent.

In households with television sets on, the respondent who reports that fact is unable to identify either the sponsor or the product being advertised in two-thirds of all cases.

This leads to the final knockout punch. That is, the sales impact expectancy of the average local television program in terms of viewing households where either the sponsor or the product being advertised is known is 1.3 per cent of the total number of households in the area.

Imported

The Canadian government thinks that Canadians can get a bigger chunk of the American market by using the word "imported" on their labels. This industry is well acquainted with the sales lure of the word "imported," but hardly for the reason stated by the Canadian official.

According to this official the word "imported" on a label suggests to the discriminating shopper a quality product. However, as this official is quoted in an advertising magazine, "Many domestic, that is American preserves, are highly adulterated and rather expensive. Attractive labels and containers with a secondary use, such as tumblers and stem-ware, usually are depended upon for sales appeal."

American manufacturers for many commodities have not yet fully realized the tremendous potency of the word "imported" on their own labels in the foreign market. In most cosmetics for instance, an American import product has almost world preference and in countless countries represents a high degree of quality and desirability which Americans in this country, both inside and outside of the industry, do not truly appreciate.

New Co-Op Adv.

Top marks to Angelique perfumes for a new kind of cooperative newspaper ad! There recently appeared in the New York Daily News a three inch boxed classified ad with a large heading LOST and the following copy over a P. O. Box number.

> A carefully gift wrapped package containing the most fascinating, flattering fragrance in the world in a beautiful one-of-a-kind, $100 bottle of Black Satin perfume by Angelique, especialled ordered from Lord & Taylor. I lost it earlier near the Plaza Hotel or in a taxi between Lord & Taylor's and the Plaza. I would rather have lost the diamond bracelet than this perfume. I will pay a generous reward for its return.
>
> P. O. Box 35
> Wilton, Conn.

Direct Mail Awards

The Gold Mailbox, which is the top award in the direct mail advertising field, was awarded to Ira Contant, of Hoffmann- La Roche.

Forty-five other companies also received awards for outstanding direct mail advertising in the Direct Mail Advertising Association's 1956 competition.

Included among these awards was Auston J. Daly of Lederle Laboratories, Thomas S. Burd of Abbott Laboratories International Company, and E. W. Whitney of Charles Pfizer.

Preferential Discounts

According to reports emanating from the meeting of the Grocery Manufacturers of America, the grocery industry is right at a point of discovering the Robinson-Patman Act.

According to discussions, the grocery product manufacturers have been under mounting pressure from their small business customers to stop giving alleged preferential discounts or allowances to some of the big chain mass distributors.

According to one executive, "Competitive conditions in grocery product marketing is reminiscent of

the early '30s when preferential discounts to some large buyers created competitive inequalities so far-reaching that Congressional action developed, and the Robinson-Patman Act was enacted."

It is said that the promise of the Administration to aid small business will be implemented by increasing activity by the Federal Trade Commission.

One of the most critical areas of discrimination is said to be in the field of cooperative advertising.

Drug and Cosmetic

Add Lanolin Plus to the cosmetic companies with a new pharmaceutical division. Dr. J. Schultz, President of Lanolin Plus, and Jack Mathis, President of State Pharmacal Company announce the purchase by Lanolin Plus of State Pharmacal.

Easy Gift

How can a company which has a utility product selling at a moderate price through mass distribution get some of this lush Christmas business? Certainly it is quite a problem to take a product that is looked upon as an everyday necessity, which people often pick up on just impulse and try to make a gift out of it. Nevertheless, Bristol-Myers believe that they have an idea that will make a gift out of Trushay lotion and bring some gift buying business into a large group of stores which have no capacity for inviting gift buying.

The plan is a new four-page, gaily illustrated leaflet which is devoted to a series of make-it-yourself gift ideas. Each of the eight gift ideas presented is tied in with the use of hand lotion, and the inclusion of a bottle of Trushay is suggested as an integral part of the gift. The leaflet contains very simple instructions for making these gifts at home out of easily accessible material. The leaflet will be offered to schools, newspapers, radio and television stations for free distribution to students, readers, and listeners.

Therapeutic Cosmetics

A new skin cosmetic treatment will soon be launched by Revlon. We understand that this will be by the pharmaceutical division.

While not the most rapidly growing part of the cosmetic industry, the kind of cosmetic being grouped in pharmaceutical divisions is certainly expanding.

Sterilized Containers

A process of irradiating polyethylene has been acquired by W. R. Grace & Company. According to an announcement, the company "visualize such end uses as sterilizable containers."

Internal Aerosol

The pharmaceutical aerosol for internal use has many intriguing possibilities for future expansion. The Riker Laboratories is a pioneer in developing this internal aerosol and have just recently announced the third product in their series of pharmaceutical aerosol inhalant preparations. This product is "Medihaler-Nitro" for the relief of acute anginal pain.

All of these preparations have in common use a metered aerosol valve along with an oral adapter that permits the inhalation of measured amounts of the aerosol preparation. The fluorinated-chlorinated propellent is known to be non-toxic under these circumstances.

The non-toxity of the propellent together with a metered valve, and where necessary an oral adapter, make the trio which holds great promise for future development along this line.

Children's Cosmetics

We do not know just why there is such a sudden revival in children's cosmetics, unless it is the operation of the old fashion cosmetic cycle.

Ten years ago there was a regular epidemic of new children's lines breaking out in every direction in the industry. These children's lines not only filled the regular channels of cosmetic distribution, but tried desperately to open up a new department in the children's wear departments.

Except for one or two of these lines, notably Helene Pessl, all of these new born children's cosmetics had a very short life.

Now, however, several cosmetic companies are suddenly busting into children's cosmetics with very respectable promotions plans in newspapers, magazines, and TV.

Among these new children's cosmetics is "Fairy Princess" by Coty, "Hidden Charm" by Dorothy Gray, and "Budding Beauty" by Tussy.

Attention, Perfumers

The J. B. Williams Company, makers of Aqua Velva, a pioneering after-shave lotion, is introducing a new product called Ice Blue Aqua Velva. According to Charles T. Lipscomb Jr., president, the distinguishing feature of this new lotion is that it will combine some eighty-five ingredients instead of using one predominant aroma, as most lotions do.

Willing Good Salesmen

The Jantzen Company, makers of bathing suits, have won quite a reputation as having a high-geared sales organization. This company has been a great exponent of the aptitude or vocational or psychological test for salesmen. Now the company has just discovered that "the most effective and successful man in the Jantzen sales organization is a 'poor misfit' making a five-figure income as an ace salesman, after vocational aptitude testing proved conclusively that he was 'too intelligent' to be a good salesman."

The company has tossed all industrial psychology tests overboard, stating at a recent sales meeting, "The vaunted personnel aptitude testing system, which is supposed to keep all the square pegs out of the round holes, actually is not only useless but downright misleading as a means of spotting budding salesmen."

World Wide Laboratory

The world is our laboratory and the briney deep our work shop. This could be the motto of Chas. Pfizer. This thought was inspired by a recent release which said that whales on the run are being injected with antibiotics, in this case Biostat, in the Antarctic.

Presenting the NEW exquisite

with the new FUTURA CAP, shown in black—also comes in brilliant GOLD-COTE... bright touches of elegance for the purse or boudoir.

RICHFORD SPILLPROOF* PERFUME FLACONS

Observe the beautifully angled silhouettes of these EXQUISITE new perfume bottles, and note the perfectly blending FUTURA caps. When you consider that each is fitted with the fabulous SPILLPROOF feature, you can understand why we are so enthusiastic about them.

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NEWS IN PACKAGING...

Aerosol Propellant

Culminating two years of cooperative research with one of its clients, Continental Filling Corporation has announced the commercially successful use of petroleum hydrocarbons as propellants for three-phase, low pressure aerosol. The product is now being marketed nationally.

Continental has also now completed installation of new aerosol cold filling equipment for hair lacquer in cans, and modernized its cold fill hair lacquer line for bottles.

Installation of new equipment and modernization of plant filling techniques has speeded up Continental's production at plants in Hobart, Ind. and Danville, Ill.

Folding Carton Contest

Entries for the twelfth annual folding carton competition of the Folding Paper Box Association of America will be received until December 31. Final judging will take place at Chicago during the association's annual meeting, March 31 to April 4. The contest is limited to member firms of the association.

Dispenser for Pfizer "Candettes"

Chas. Pfizer & Co. will use a plastic dispenser display for its "Candettes." As a customer removes one box from the dispenser, the remaining boxes are lowered by gravity, and the lowest is nudged forward on two thin rails of plastic by a slanting kick-plate.

With an orange-red base and white

lettering, the dispenser has four basic parts, each injection molded simultaneously in the same die-base. Developed by Kirby-Cogeshall-Steinau Co., Inc., Milwaukee, the dispenser's patent rights are reserved.

Sees Rise in Glass Cont. Demand

Glass container shipments of 144 million gross in 1957 were predicted by C. C. Merrifield, president of The Econometric Institute, Inc., an independent economic consulting organization, when he addressed some 150 members of the Glass Container Manufacturers Institute November 14 at the opening session of a three-day membership meeting in Phoenix. Mr. Merrifield's prediction represents an increase of four million gross—or three per cent—over the estimated 1956 total.

A pattern of shipments similar to that observed in the food industry has been evident in shipments of medicinal bottles, Mr. Merrifield said. "There are several elements of strength in this market for glass containers, particularly in the development of new antibiotics. In particular, whenever the actual medicine or drug comes into direct contact with the container, glass is usually the most efficient container," he stated.

Pointing out that areas of strength in the use of glass for packaging toiletries and cosmetics were particularly evident in the perfume and lotion fields, Mr. Merrifield predicted that shipments of glass containers to the toiletry and cosmetic industry are apt to rise about five per cent above the estimated 1956 level in 1957.

G. E. Dyke ConCanCo Vice-Chrmn.

George E. Dyke, formerly chairman of the board and president of Robert Gair Company, Inc., which merged October 26 with Continental Can Company, Inc., has been elected vice-chairman of the board of Continental, according to an announcement by General Lucius D. Clay, Continental's chairman.

Raymond F. DeVoe and Norman F. Greenway, former senior vice-presidents of Gair, and Robert L. Fitts, previously a Gair vice-president, have been elected vice-presidents of Continental.

Former activities of Robert Gair, together with Continental's paperboard making and fibre drum divisions, will be administered under the general supervision of Mr. Dyke.

ConCanCo Chicago Sales Mgr.

C. E. Lawrence has been appointed Chicago district sales manager for the Plastic Container Division of Continental Can Company. His headquarters are at 2930 North Ashland Avenue.

Peerless Develops Aerosol

Development of an extruded aluminum aerosol for perfumes and pharmaceutical products has been announced by Peerless Tube Company through its executive vice-president, T. W. Schmitt,

who asserted that the container has features of vast improvement over any container thus far marketed.

Mr. Schmitt predicted a big demand for the new product, a one-piece aluminum can, with no bottom seam. Because it has a very small aperture at the top to which the valve is sealed, leakage is virtually impossible.

"With the pressure problem effectively controlled in this small pressurized package," said Mr. Schmitt, "a new field is developed for aerosol perfumes, colognes, deodorants and pharmaceuticals in purse and pocket sizes."

Among its advantages, according to Mr. Schmitt, are: its light weight, being considerably less than glass and plastic; ability to withstand higher internal pressures; unbreakability; more flexibility of decoration; much thinner walls than plastic or glass, resulting in greater volume for the size of the container; and variability of length without costly new molds.

The new container can be made in sizes down to one-inch length. It may be decorated up to four colors on the base coat and may be buffed and either anodized or coated.

"The drug industry," said Mr. Schmitt, "will find this new pocket-size extruded container to have many welcome features. Using the right valve, a consumer would get an exact dosage. Throat, nose sprays and other products, including the prescription type, could be dispensed in this safe, leak-proof, attractive container."

The product development was directed by Mr. Schmitt and designed and supervised by W. W. Pflug, vice president of the firm's Shell Division. Large scale production by January is planned.

Patent THOUGHTS AND TRENDS

by Thomas Cifelli, Jr
PATENT ATTORNEY*

INTERPRETATION OF PATENT CLAIMS

It is believed that a fair statement to make is that anyone who has anything to do with patents in one form or another soon becomes exasperated with patent attorneys who are asked the simple question of whether a certain thing or process infringes a certain patent and who, instead of giving a straightforward answer, make a big "production" out of the matter.

After all, it would seem that the patent claims are drafted in English and while many of them contain somewhat artificial language, they do make sense if read a few times carefully. Furthermore, the chances are overwhelmingly in favor of the proposition that the person asking the question knows a lot more about the subject matter of the patented invention than does the patent attorney.

Nevertheless, in the usual case it will be found that the patent attorney will only give a qualified, tentative opinion upon inspection of the claims and will probably insist not only on reading the description in the patent but also in carefully studying the file wrapper, which is the term given to the entire proceedings had before the patent Examiner right up to the issuance of the patent. One can be pardoned if he concludes that it almost looks as if the patent attorneys are doing their utmost to make work for themselves.

Of course, there are a number of cases, and these are probably a great majority, where there can be no doubt at all concerning claim coverage. In such cases there does not appear any real justification for referring the matter for patent counsel's opinion. One does not see a physician every time he has a headache. On the other hand, there are cases where the question of claim coverage is so complicated and confused that no one will seriously argue with the proposition that opinion of patent counsel should be obtained. A seriously injured person obviously requires medical attention. The present remarks are directed to that area of cases where one might not *realize* that there might be more to the patent situation than meets the eye.

Let us consider a few actual cases which illustrate the type of patent situation which we are discussing. For purposes of illustration, the factual situations involved in the various cases will not be gone into extensively in any detail. Consequently, it should be understood that only an incomplete factual picture is given here. Nevertheless, the decisions in question actually turned on the very facts noted here.

The first case we shall consider dealt with electric welding compositions or fluxes. The simple question was whether or not manganese silicate is an alkaline earth metal silicate. The patent in suit contained claims covering essentially a combination of alkaline earth metal silicate and calcium fluoride. The alleged infringer substituted manganese silicate for magnesium silicate.

Offhand, it would appear that any high school chemistry student should know that manganese is not an alkaline earth metal and, therefore, that manganese silicate does not come under any claim calling for alkaline earth metal silicates. Yet, the Court, the U. S. Supreme Court, held to the contrary. The Supreme Court first indicated the obvious, namely, that the accused composition did not come clearly within the language of the claims. However, the Court did not stop there. The Court recognized that if it permitted the imitation of a patented invention which does not copy every little detail, the patent grant would be a rather hollow and useless thing. Such an attitude would, the Court said, encourage the unscrupulous copyists to make unimportant and insubstantial changes in order to take the matter outside of the claims and hence outside of the reach of the law. In the words of Mr. Justice Jackson, who wrote the opinion for the Supreme Court:

> One who seeks to pirate an invention, like one who seeks to pirate a copyrighted book or play, may be expected to introduce minor variations to conceal and shelter the piracy. Outright and forthright duplication is a dull and very rare type of infringement. To prohibit no other would place the inventor at the mercy of verbalism and would be subordinating substance to form. It would deprive him of the benefit of his invention and would foster concealment rather than disclosure of inventions, which is one of the primary purposes of the patent system.

In response to these considerations the courts evolved what has come to be known as the "doctrine of equivalents." The basis of this doctrine is that the courts will not permit anyone to practice a fraud on a patent. The theory on which this doctrine is based is that if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form, or shape.

While in its period of development the doctrine was usually applied in cases where there was an equivalence in mechanical components the same principles were later applied to compositions, where there was equivalence between chemical ingredients.

In order to determine what is an equivalent the situation must be studied against the context of the patent, the prior art, and the *particular* circumstances of the case. For this reason, a patent attorney is not only justified in looking into all of the pertinent facts but actually is under a duty to his client

*Richards and Cifelli, Newark, New Jersey.

to do so. How else could a patent attorney determine any question involving claim coverage without a complete study of the matter and still heed the following statement taken from Mr. Justice Jackson's opinion:

> Equivalence, in the patent law, is not the prisoner of a formula and is not an absolute to be considered in a vacuum. It does not require complete identity for every purpose and in every respect. In determining equivalents, things equal to the same thing may not be equal to each other and, by the same token, things for most purposes different may sometimes be equivalents. Consideration must be given to the purpose for which an ingredient is used in a patent, the qualities it has when combined with the other ingredients, and the function which it is intended to perform. An import factor is whether persons reasonably skilled in the art would have known of the interchangeability of an ingredient not contained in the patent with one that was.

Getting back to the Supreme Court case itself, we note that chemists familiar with the fluxes in suit testified that manganese and magnesium were similar in many of their reactions. Also a metallurgist had testified that alkaline earth metals were often found in manganese ores in their natural state and that they serve the same purpose in the fluxes. Furthermore, a chemist had testified that "in the sense of the patent" manganese could be included as an alkaline earth metal. In addition, this type of testimony was corroborated by reference to recognized texts on inorganic chemistry. The trial itself in the lower Court occupied some three weeks during which the trial Judge visited laboratories with the lawyers and experts to observe actual demonstrations of welding as taught by the patent and of the welding alleged to infringe. The trial Judge also viewed motion pictures of various welding operations and tests and heard many experts and other witnesses. He finally concluded that "for all practical purposes, manganese silicate can be sufficiently and effectively substituted for calcium and magnesium silicates as the major constituent of the welding composition."

If you were *now* asked the question: Is manganese silicate an alkaline earth metal silicate, what would you say?

Another case somewhat along the same line involved a holding that a claimed process which contained the expression "slightly elevated temperature" and which expression was defined in the patent description as covering 160° F. to 200° F., was infringed by a process conducted at room temperature.

That case, decided by the Federal Circuit Court of Appeals for the 2nd Circuit, dealt with a process for treating glyceride oils in order to give them novel flavor and odor characteristics. The idea was to infuse the oil at a slightly elevated temperature with a small amount of olive paste for a short period and then removing the olive paste. The accused process was carried on at room temperature, but for days, not a short time.

The Court took the view that it would be wrong to divorce heat and time into two separate elements and to hold that because the defendant left out heat and greatly lengthened the time it omitted one of the elements of the claim. The Court felt that the two correlatives of heat and time constituted a single element and although the defendant did not adopt the combination specified in the claim, the combination which it substituted was an equivalent.

While the two cases which have been quoted here as illustrating the doctrine of equivalents both involved an application of the doctrine *favorable* to a patentee it should not be inferred that this is always the case. Sometimes, the doctrine operates *against* a patentee's interest. Thus, where a device is so far changed in principle from a patented article that it performs the same or a similar function in a substantially different way, but still falls within the literal words of the claim, the doctrine of equivalents may be used to restrict the claim and defeat the patentee's action for infringement.

Perhaps, the other main reason why patent attorneys hesitate to give "off-the-cuff" opinions regarding claim coverage is another doctrine called "file wrapper estoppel." The doctrine of file wrapper estoppel, stated simply, means that a patent claim as allowed must be read and interpreted with reference to claims that have been cancelled or rejected and the allowed claims cannot by construction be read to cover what was thus eliminated from the patent.

A recent case which illustrates this file wrapper matter involved a suit against the Sunbeam Corporation under a patent dealing with an electric toaster. Even though Webster's dictionary defined "light" as including infra-red energy, which of course involves heat, the Court held that a claim which included the term "light sensitive element" was not infringed by a toaster which included a thermostat. The Court found that the original claims were broad enough to cover the use of thermostats but that the Examiner rejected the claims on prior art and the plaintiff then changed his claim and asserted that the "light sensitive element" was responsive to the surface color of the bread being toasted. There was expert testimony to show that when the word "light" is used in connection with color, it (light) is limited in its meaning radiant energy within the visible spectrum and that the words "light sensitive element" are not considered in scientific circles as being descriptive of thermostats or bi-metallic elements and are not normally applied to them.

The foregoing commentary has only touched on some of the highlights of the doctrines of equivalents and file wrapper estoppel. There are a number of ramifications of these doctrines. However, it is believed that enough has been said here to show that when a patent attorney wants to get the whole story before giving an opinion on patent coverage he is only trying to do his job.

RECENT PATENTS

2,761,813—**A. Goet—Method of Producing Cultures of Microorganisms.**
2,761,859—**Abbott Labs. — Aqueous Soluble Salts of Erythromycin.**
2,761,860—**Abbott Labs. — Thiamorpholine Synthesis.**
2,761,861-3—**Hoffmann-La Roche — Xanthines.**
2,761,865—**Hoffmann-La Roche — Pyridylalkyl Sulfones.**
2,761,866—**Hoffmann-La Roche—3-Pyridine Sulfinic Acid.**
2,761,878—**Hartford Nat. Bank & T. C.—β Ionylidene Acetaldehyde.**
2,762,742-3—**Merck—1 - (4 - Nitro Phenyl)-3-(2-Pyrimidyl) Urea Compound and 1-Phenyl-3(3-As Triazinyl) Urea Composition for Treatment of Coccidiosis.**
2,762,744—**Les Labs. Bruneau (France)—Piperazines and Suppositories Containing Same.**
2,762,745—**W. H. Benend (Germany)—Injectable Khellin Solution.**
2,762,746—**Am. Home Products—Anti-Malaria Composition.**
2,762,747—**Upjohn—Prepn. of 17-Keto Steroid by Penicillium.**
2,762,801—**J. R. Geigy (Switzerland)—Bis-Triazinylamino Stilbenes.**

(Continued page on 854)

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NEWS . . .

Lehn & Fink Buys Ogilvie

Lehn & Fink Products Corporation has purchased the assets of Ogilvie Sisters, whose products will be placed under the management of the Dorothy Gray Sales Division, it has been announced by Edward Plaut, president of Lehn & Fink.

Outlining future marketing plans for the Ogilvie line, James M. Boohecker, general manager for Dorothy Gray, said that until a comprehensive study of Ogilvie packaging has been completed, there will be no changes.

Lawrence W. Carter, Ogilvie sales manager, is joining the Dorothy Gray sales headquarters staff where he will be concerned with transferring sales activities to Dorothy Gray. The three Ogilvie Sisters, Claro O. MacInnis, Mabel O. Carter, and Georgina O. Tweddle are being retained as consultants to Dorothy Gray.

Warner-Chilcott Appoints

H. Benn Corwin Jr. has been appointed assistant to the manager of the Warner - Chilcott Laboratory Supply Division.

Slaght in New Post

E. C. Slaght Jr. has been appointed manager of the market development department of Heyden Chemical Corporation, Simon Askin, president of Heyden, has announced. Mr. Slaght was previously supervisor of special products in the department.

E. C. SLAGHT JR.

Schering Experimental Psych.

Francis Mechner has been appointed an experimental psychologist in Schering Corporation's department of pharmacology, according to an announcement by Robert E. Waterman, vice-president of the firm. Mr. Mechner will establish an experimental psychology section, which will study the psychological effects of new drugs on laboratory animals.

Before joining Schering, he was a research associate in the Psychology Department of Columbia University, where he will continue to teach a course in experimental psychology.

Shulton Scientific Director

Dr. Charles H. Kline has been appointed scientific director of Shulton, Inc., it has been announced by George L. Schultz, president. Dr. Kline will be responsible for direction of the firm's over-all research program.

DR. CHARLES H. KLINE

Organon Asst. Medical Dir.

Reynold C. Merrill, M.D., has been appointed assistant medical director of Organon Inc. He received his Ph.D. in chemistry from Stanford University and his M.D. from Johns Hopkins School of Medicine and has served on the staff of Johns Hopkins Hospital. Prior to joining Organon, he was engaged in private medical practice in California.

He has been a teaching fellow at Utah State College and Stanford University, and he has engaged in chemical research for various companies throughout the United States.

SOC Election

Elected president of the Society of Cosmetic Chemists was James H. Baker, according to an announcement. Robert A. Kramer was elected secretary and Walter A. Taylor, treasurer. Gabriel Barnett and Savery F. Coneybear were elected directors.

FRANK SPITALERI

Perry Bros. Perfumer

Frank Spitaleri has joined Perry Bros. as perfumer. He has 30 years experience in the perfume and essential oil industry, much of it in analytical research in creative perfume formulations for soap, aerosols and toilet preparations.

Ames General Sales Meeting

To launch its new product, Nostyn, which it describes as a "calmative for the relief of daily tensions," Ames Company, Inc. held a general sales meeting recently at Edgewater Park, Miss.

E. L. Miles, vice-president for marketing, conducted the meeting, which included a welcome address by C. F. Miles, chairman of the board, and an introductory address by George W. Orr Jr., president. Technical product information was presented by Dr. R. K. S. Lim and Dr. N. L. Heminway of Ames, and Dr. John Ferguson of Traverse City State Hospital, Michigan.

McKeen Serving Alma Mater

John E. McKeen, president and chairman of Chas. Pfizer & Co., Inc., has been named a member of the Corporation of Polytechnic Institute of Brooklyn, the college at which he earned his chemical engineering degree 30 years ago.

Mr. McKeen who joined Pfizer the day after he graduated from Polytechnic in 1926, holds honorary doctorates of law from St. John's University and Long Island University of Brooklyn and an honorary doctorate in engineering from his alma mater.

Varley Joins Strong, Cobb

Arthur P. Varley has joined Strong, Cobb and Company, Inc. as production planning and packaging manager, reporting to Louis F. Mullick, director of manufacturing, according to an announcement by John N. Eustis, president.

Chatting at the Fall reception and cocktail party given by Givaudan-Delawanna, Inc. are, left to right, Maurice Meunier of Les Parfums de Dana, Inc.; Hans Maucher of Old Empire, Inc.; H. Gregory Thomas, president of Chanel, Inc.; E. R. Durrer, president of Givaudan-Delewanna, Inc.; Arthur Kreinik of Les Parfums de Dana, Inc.; and George Warren of Givaudan. More than 300 members of the soap, perfume, cosmetic and allied industries attended the affair, which was held at the University Club in New York.

Abbott Is Building in Fla.

A new distribution center and area sales headquarters for Abbott Laboratories, under construction in Jacksonville, Fla., is scheduled for completion February 1, with occupancy tentatively set for March. The announcement was made by Herbert S. Wilkinson, Abbott vice-president and director of sales.

"Abbott's new Jacksonville branch is a direct result of the tremendous growth of Florida during the past few years and the vastly expanded medical and hospital facilities of the state," said Mr. Wilkinson. "Our studies show that while Florida's population has increased 55 per cent, buying income in the state has gone up 105 per cent."

The new branch, located at the corner of Haines and Gessie Streets, will be managed by Irwin Cross, Abbott's Jacksonville district manager.

Fourth U. S. Freon Plant

The first bulk shipment of West Coast-produced Freon propellent was delivered from the Du Pont Company's new multi-million dollar plant at Antioch, Calif., on December 11 to G. Barr & Company, Los Angeles. Representing the first large quantity of liquefied gas turned out by the plant, the 3,700 gallon, or 37,000 pound, shipment contains enough propellent for 185,000 containers of a typical six-ounce aerosol hair spray.

This is the fourth U. S. plant producing Freon compounds. Others are located at Deepwater Point, N. J., Louisville, Ky., and East Chicago, Inc.

Foragers Banquet

The 60th Anniversary Banquet of the Foragers of America will be held January 11 at the New York Athletic Club.

Kolmar of Canada, Limited

Kolmar of Canada, Limited will be the name of Kolmar-Wilckens Limited effective January 1, according to an announcement by Henry Groh, president. The decision to make the name change was prompted by many suggestions from the firm's accounts.

Mr. Wilckens retired from the business last Fall and has decided to live in Florida.

Roy Titus Is Chairman

Roy Titus, executive vice-president of Helena Rubinstein Inc., has been elected chairman of the board to fill the vacancy created by the death of Carl Sherman. Mr. Titus will continue as executive vice-president.

ROY TITUS

New Warner-Lambert Plant

The Warner-Lambert Pharmaceutical Company formally opened a new multi-million-dollar plant to house its Lambert-Hudnut Division November 14 in Lititz, Pa., boyhood home of Elmer H. Bobst, chairman of the Warner-Lambert board of directors. Mr. Bobst has announced that another wing will soon be started at the Lambert-Hudnut plant.

Employed at the plant are three hundred and fifty men and women, and this figure is expected to increase to 750 in a year or two. Most operations of the new plant were formerly conducted in an old loft building in Manhattan. Two hundred giant moving vans transported equipment from New York to Lititz. New equipment, much of it specially designed, has also been installed.

Representing Charabot

Bridge Chemical Co. Inc., Chicago, has been appointed representative for Charabot & Co. Inc. in Minnesota, Iowa, Illinois, Wisconsin, the western part of Michigan, and Indiana, according to an announcement by M. G. Couderchet, president of Charabot.

U.S.I. Director of Sales

Alden R. Ludlow Jr. has been named director of sales for U. S. Industrial Chemicals Co., division of National Distillers Products Corporation, it has been announced by Dr. R. E. Hulse, vice-president of National Distillers and general manager of U.S.I. Mr. Ludlow succeeds Lee A. Keane who has retired.

Except for several wartime years overseas with the U. S. Air Force, Mr. Ludlow has been with U.S.I. since 1934 and has been manager of alcohol sales for the past ten years. Mr. Keane has been U.S.I.'s director of sales for the past twenty years and with the company for almost thirty years.

ALDEN R. LUDLOW JR.

Maurice Chez Retires

Maurice R. Chez has retired as vice-president and director of Max Factor & Co. for reasons of health, according to an announcement by Max Factor Jr., president. With the company for 29 years, Mr. Chez was in charge of the United States Sales Division. Davis Factor, chairman of the board and general manager, will take over the duties of Mr Chez.

Appointed by FMC

Dr. Frank P. Greenspan, formerly manager of organic research and development of the Becco Chemical Division, Food Machinery and Chemical Corporation, has been named director of development of the new FMC Organic Chemicals Division. Henry S. Winnicki, president and manager of the division, has announced that Dr. Greenspan will move to New York City to take up his new post.

Mr. Winnicki has named Leonard Seglin manager of engineering development for the new division.

Head FCIB Drug Club

Paul Clever, assistant export manager of Mallinckrodt Chemical Works, was elected chairman of the Drug & Chemical Export Club of the Foreign Credit Interchange Bureau recently at the club's annual meeting in New York. Irving Michaels, credit manager of Revlon International Corporation, was elected vice-chairman.

Gov. Robert B. Meyner of New Jersey turning the key to formally open the J. T. Baker Chemical Company's new research laboratories building. Looking on are, left to right, M. W. Smith, president of J. T. Baker; E. L. Mabry, president of Vick Chemical Company; Dr. E. C. Larsen, vice-president and technical director of Baker; Dr. George E. Ham, Baker's director of research, and Dr. Arthur C. Cope, head of the Chemical Department, Massachusetts Institute of Technology.

Parke, Davis Promotes Four

Parke, Davis & Company has announced four promotions: Terrance A. Gallagher and William C. McKay of the Chicago branch have been promoted to invoice supervisor and credit manager, respectively. William J. Roskopf, also of the Chicago branch, has been transferred to St. Louis branch as assistant to the manager. Joseph P. Gallagher, of the Buffalo depot, has been named office supervisor.

Guest of honor at a dinner to mark his appointment as assistant executive secretary of the National Association of Retail Druggist, Harry J. Towers, second from left, former manager of trade distribution for E. R. Squibb & Sons, receives a wrist watch from W. L. Arscott, Squibb vice-president and director of sales. Dinner and gift were sponsored by Mr. Towers' associates in the New York office of Squibb and the executive committee of the NARD. Also congratulating Mr. Towers are J. J. Toohy, far left, general manager of Squibb, and J. C. Leppart, executive vice-president of Olin Mathieson Chemical Corporation.

Price Spots on Plastic Caps

Owens-Illinois Glass Company has developed equipment which puts price spot marks on the tops of molded plastic closures, according to an announcement by J. A. Rudy, closure and plastics sales manager of the company.

Price spot marks have posed no serious problems for metal closures, but molded caps presented special difficulties in the development of equipment to handle the operation. In order to provide a price marking space on a molded closure a raised section is formed on its top.

Another development is the use of debossed lettering on the section. The painting operation makes this lettering stand out and still reserves ample space for price marking.

Schering European Div. Mgr.

W. Douglas Taylor has been appointed manager of Schering Corporation's European Division, according to an announcement by W. H. Conzen, manager of the International Division.

In his new post, Mr. Taylor will supervise Schering's operations in the Mediterranean and Middle Eastern area. He will also serve as manager of Scherico Limited, Schering's Swiss subsidiary.

Coty Engages de Kolb

Coty, Inc. has appointed Eric de Kolb and his organization as consultants and to direct the design of art departments of the company.

Worth Your Investigation...

CYCLAMAL

An Aldehyde of great stability and of such high degree of purity that it can be used in the finest perfume extracts as well as soaps and cosmetics.

RESEDALIA

An Acetal resembling the aroma of Reseda Mignonette. It is a valuable addition to all floral bouquets, and as a modifier for the purpose of rounding off all types of compositions.

VERONOL

An Aldehyde of great potency; imparts the aldehydic top note to perfumes to which it is added. It is extremely valuable as a modifier. Used from 1/10 to ¼ of 1%.

ROSANOL

An Acetal, ideal for all rose type compounds, because of its fine character, great lift and extreme stability.

The advantage of these aromatic chemicals is that their great purity permits their use in the most luxurious perfumes . . . and their low cost makes them feasible for even the most inexpensive soap fragrances.

Sole Representative in the United States for J. and E. Sozio, Grasse, France

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Aromatics Division

VERONA CHEMICAL COMPANY

Plant and Main Office: 26 Verona Avenue, Newark, N. J.

1210 Rosedale Avenue, Chicago, Ill.

Chicago Drug, Chemical Slate

Elected president of the Chicago Drug and Chemical Association is Glenn H. Reinier, director of purchasing for Abbott Laboratories, who served as vice-president of the Association during the past year, and has been on the board of directors since 1950.

Other officers and directors elected by the association were: vice-president, William G. Lister, vice-president of Cenpro Corporation; secretary, Charles E. Arch, vice-president of Sheffield Tube Corporation; treasurer, E. A. Sommers, general manager of Standard Pharmacal Co.

Directors for two years will be: Cor-

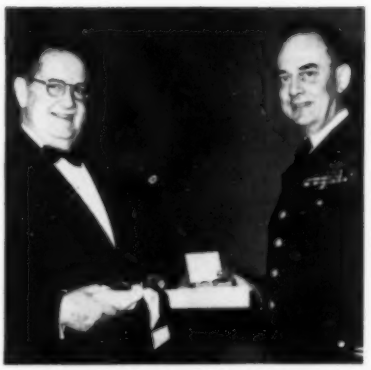
GLENN H. REINIER

nelius D. McGrath, Jr., Chas. Pfizer & Co.; J. C. Browning, DeMert and Dougherty, Inc.; C. A. Rowell, Valentine Laboratories; Joseph N. Doroskin, Heyden Chemical Corporation; and Harrison S. Weeks, Tennessee Products and Chemicals Corporation.

Elect Tainter College Trustee

Dr. Maurice L. Tainter, director of the Sterling-Winthrop Research Institute since its organization in 1946, has been elected a trustee of Albany Medical College. He is a past president of the New York Academy of Sciences and a trustee of the Albany College of Pharmacy.

WARREN E. JOHNSON



Col. Eugene C. Jacobs, M.C., U.S.A. receives the Wellcome Medal and prize for 1956 from Howard B. Fonda, senior vice-president of Burroughs Wellcome & Co. (U.S.A.) Inc., at Honors Night of the Association of Military Surgeons of the U.S., held recently at the Hotel Statler in Washington, D. C. Colonel Jacobs' prize-winning essay, "Tuberculosis: Yet an Unconquered Disease," points out the problem of controlling and treating tuberculosis, particularly by present day methods of mass X-ray.

Promoted by Schering

Melvin Clere, former Pittsburgh Division sales manager for Schering Corporation, has been promoted to administrative assistant in the Production Division, according to an announcement by Herman W. Leitzow, vice-president. Mr. Clere joined Schering in August, 1947 and has been a professional sales representative in the Boston and Los Angeles areas.

Bristol-Myers Adv. Managers

John P. Kennedy and Clayton J. Rohrback Jr. have been appointed advertising managers of Bristol-Myers Products Division, according to Donald S. Frost, vice-president in charge of advertising.

U.S.I. Appoints Johnson

Warren E. Johnson has been named manager of alcohol and chemical sales for U. S. Industrial Chemicals Co., it has been announced by Dr. R. E. Hulse, vice-president of National Distillers Products Corporation and general manager of the U.S.I. Division. Mr. Johnson will have responsibility for sales of U.S.I. industrial alcohol, solvents and other chemicals.

With the U.S.I. sales organization since 1940, Mr. Johnson became manager of the Boston Sales Division in 1944 and manager of U.S.I. chemical sales in 1950. With this change, he becomes responsible for industrial alcohol sales in addition to his previous product responsibilities. U.S.I. alcohol sales had formerly been under Alden R. Ludlow Jr., who was recently named director of sales for the company.

Dr. Vaughn Resigns

Dr. Thomas H. Vaughn has resigned as vice-president in charge of research for Colgate-Palmolive Company, a position to which he moved three years ago from Wyandotte Chemicals Corporation. Dr. Vaughn is president-elect of the Industrial Research Institute.

Like Father, Like Son

Ben S. Cottle Jr. has been appointed to the sales staff of Givaudan-Delawanna, Inc. and its associate companies, Givaudan Flavors, Inc. and Sindar Corporation, according to an announcement by R. E. Horsey, vice-president

BEN S. COTTLE JR.

in charge of sales for Givaudan-Delawanna. Mr. Cottle will represent the firms in the northern New Jersey area.

Son of the manager of Givaudan's West Coast branch office, located in Los Angeles, Mr. Cottle, through his father's twenty-five year association with the company, is well acquainted with Givaudan's products.

Joins Pharmaceuticals, Inc.

Ben M. Seiger, formerly director of marketing for the American Weekly, has joined Pharmaceuticals, Inc. as executive assistant to S. L. Tedlow, it has been announced by Mr. Tedlow, executive vice-president.

BEN M. SEIGER

DOW

From Tank Car To Boudoir

Dow Triethanolamine now reaches you . . . faster!

Shipment when you need it . . . supply you can depend on . . . a high quality that improves cleaning and cosmetic formulations. The newly expanded Dow Triethanolamine production gives you *all* these advantages!

Understandably, this greater volume assures you of prompt delivery, without irritating and costly delays. But let's look at *quality*, too. Refinements in the Dow production process make possible a high quality triethanolamine . . . better emulsifying agents than ever before. These amides and soaps are practically neutral, non-irritating and have more effective cleaning action. Cleaning and polishing compounds can also benefit from the use of triethanolamine.

Eliminate your delivery headaches. Order your next shipment of triethanolamine from your nearest Dow sales office, or THE DOW CHEMICAL COMPANY, Dept. OC 850G-2. Midland, Michigan.

you can depend on DOW CHEMICALS

DOW

Avon Opens Kansas City Bldg.

A new Kansas City Branch building has been opened by Avon Products, Inc. "In this 70th Anniversary Year," said John A. Ewald, president, "we of Avon are moving ahead with an expansion and modernization program dedicated to the future of our business. The new Kansas City home of Avon has been planned and built in recognition of the growth and acceptance of Avon as a product and as a service." The building, located on South 71 Highway, is less than ten miles from downtown Kansas City.

Colton Expands Facilities

Expansion of the Arthur Colton Company's Mancelona, Mich. plant's facilities for producing rotary and single-punch tablet press punches and dies has been announced by Kenneth B. Hollidge, executive vice-president.

The rapidly growing market for precision carbide punches and dies is one of the major reasons for the expansion, Mr. Hollidge said. Use of carbide tools on new high-speed presses with precision-bored heads that make up to 2,500,000 tablets per day is effecting much economy, he said, because of the long-wear life these types of tools provide.

Colton has also recently acquired several pieces of property in the Mancelona area for future expansion, Mr. Hollidge revealed.

At the president's banquet during the 82nd annual meeting of the National Wholesale Druggists' Association are, left to right, Carl F. G. Meyer III, newly elected president of the NWDA, and his wife, and James Allen, outgoing president, and his wife.

Win Kimble Award

Philip R. Edwards, Ph.D., and William H. Ewing, Ph.D., of the U. S. Public Health Service, both of whom developed techniques which speed up the identification of bacteria causing food poisoning, have been selected for the 1956 Kimble Methodology Research Award.

Revlon Vice-Pres. and Treas.

Irving J. Bottner has been appointed vice-president and treasurer of Revlon, Inc., according to Charles Revson, president.

DCAT Hears Mintener

Bradshaw Mintener, former assistant secretary of Health, Education, and Welfare told the Drug, Chemical and Allied Trades Section of the New York Board of Trade that the Food and Drug Administration needed to be publicized so that the general public would become aware of the important part that this agency plays in protecting public health. He told the luncheon meeting of the section, held November 29 at the Waldorf-Astoria Hotel, New York, that this agency needed a much larger appropriation to perform its work and that the industries should work to get more funds so that the field can be properly covered.

Barr Installs Storage Tanks

Installation of five propellant storage tanks, with a combined capacity of 380,000 pounds has been completed at G. Barr and Company's Chicago plant. The installation is believed to be the largest ever made in the aerosol industry for stocking propellants.

George Barr, president of the company, has stated that the tanks increase the plant's total propellant storage capacity to nearly 900,000 pounds. They supplement "transient" supply facilities of tanks on railroad cars parked on the company's rail siding. Permanent supply tanks have also been installed at Barr plants in New York and Los Angeles.

Felton Adv. Agency

Felton Chemical Company has appointed Carl S. Leeds Company as its advertising agency.

The board of directors of Ciba Limited, Basle, Switzerland, during its recent visit to Ciba Pharmaceutcal Products Inc. The board's first group inspection tour of the company's American facilities included visits to Ciba Company Inc. of New York, the New Jersey and Ohio Divisions of the Toms River-Cincinnati Chemical Corporation, and Ciba Company Ltd. of Montreal. First row, left to right, Dr. Rudolf Speich, deputy chairman of the board; Dr. Arthur Wilhelm, deputy chairman of the board and a member of the executive committee; Dr. Robert Kaeppeli, chairman of the board and a member of the executive committee; Dr. Heinrich Wolfer-Sulzer; and Christian Schmid. Second row, left to right, Dr. Plinio Bolla; Dr. Carl J. Burckhardt; Hans R. Suter; Dr. Samuel Schweizer; and Dr. Carl Ludwig.

LOOK at the sales advantages offered your product by G-11®

(Hexachlorophene U.S.P.)

The market for products containing G-11 is an established, growing market with virtually unlimited opportunities for profitable development.

Few products have ever been studied so exhaustively and given such unanimous acclaim by authorities. G-11 is recognized as the proven, effective and non-irritating antiseptic chemical that offers outstanding hygienic and deodorizing advantages.

Years of safe, successful use by millions of people assure the continued success of your products containing G-11.

As the originator and producer of G-11, Sindar offers you the benefits of its scientific knowledge, practical marketing experience and technical service in using it to the best advantage in your soaps, detergents and cosmetics.

Bulletins are available on:

- **Physical and Chemical Properties**
- **Toxicological Properties**
- **Bacteriological Properties**
- **Cosmetic Use**
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Kaempkes Is CIBS Head

Elected president of the Cosmetic Industry Buyers and Suppliers Association was George A. Kaempkes of Pacquin's Inc. W. L. Jaeger of Park & Tilford was elected first vice-president; John Duncan of Hazel-Atlas Glass Co. was elected second vice-president.

A. T. Stewart of Parfait Promotion Packaging Co. was elected recording secretary; J. W. Voit of George Luebers & Co. corresponding secretary; and L. M. Scovill of Scovill Manufacturing Company, treasurer.

J. P. Jordan of Crown Cork & Seal Company and J. E. Beyer of Lehn & Fink Products Corp. were elected directors.

Two Gair Div. Appointments

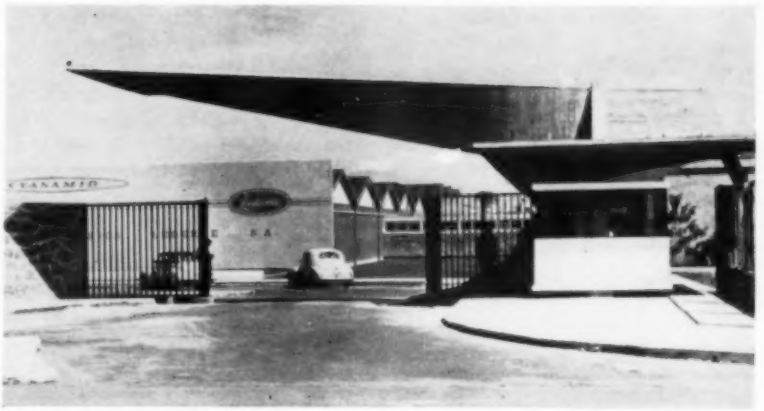
Arthur J. Beilein has been appointed superintendent of finishing operations at the Tonawanda Boxboard Mill of the Robert Gair Division of Continental Can Company, Inc., according to an announcement by William H. Caddoo, vice-president in charge of the division's boxboard operations. James O. Elmore has been appointed personnel manager at the mill to replace Mr. Beilein.

Lanolin Plus Appoints Sauers

Les Sauers has been appointed field sales manager for Lanolin Plus, Inc., according to an announcement by George D. Crittenton, vice-president in charge of sales. Mr. Sauers will contact wholesale and chain druggists for the company.

Has "Meelium" Sales Rights

Prentiss Drug and Chemical Company has acquired exclusive sales rights to "Meelium" and will offer the deodorant to the aerosol filling trade in the form of a concentrate.



Entrance to the newly completed plant of Laboratorios Lederle Mexico, S.A. Located near Mexico City, the plant covers close to 70,000 square feet and employs some 200 Mexican citizens.

Joins CSC Mkt. Dev. Dept.

Wallace N. Davis has joined the market development department of Commercial Solvents Corporation as field representative covering Michigan, northern Indiana, northern Illinois,

WALLACE N. DAVIS

Iowa, Wisconsin, Minnesota, and North and South Dakota, according to an announcement by Frank E. Dolian, manager of the department. Mr. Davis has been with CSC since 1953 as an industrial chemicals sales representative.

The Procter and Gamble Toilet Goods Division's new plant at Iowa City. Production at the multimillion dollar plant augments that of the division's original plant in Cincinnati.

Receives C.S.M.A. Award

Dr. George F. Reddish, professor of microbiology and public health at St. Louis (Mo.) College of Pharmacy and Allied Sciences, has received the 1956 Achievement Award of the Chemical Specialties Manufacturers' Association for his technical contributions in the fields of public health, disinfection, and antisepsis.

BIMS of Boston Chairman

Hart Harris Jr. of S. B. Penick & Company was re-elected chairman at a recent meeting of the executive committee of the BIMS of Boston. Warren Kell of Ungerer & Company and T. Fred Baker of Fritzsche Bros. were added to the committee.

Chemical Buyers to Meet

"Forward Look in Chemical Buying" is the theme of the fifth annual midwinter meetings to be held in January by the Chemical Buyers' Group of the National Association of Purchasing Agents. The first will be held at the Congress Hotel, Chicago, on January 24, with an identical meeting to follow January 29 at the Hotel Commodore, New York.

Witco Acquires Ultra

Witco Chemical Company has acquired all of the outstanding stock of Ultra Chemical Works, Inc. through an exchange of stock. Ultra will operate as a wholly owned division of Witco with no change in personnel.

Essential Oil Firm Opens

A new extract and essential oil firm, Quintessence Laboratories, has opened in New York at 6 Varick Street. It is headed by Dr. Noman C. Larsen.

Aerosol Consultant Firm

A consultant firm, which will be devoted exclusively to the problems of pressurized packaging, has been formed by Frederick G. Lodes, co-founder of Precision Valve Corporation, who recently resigned as an officer and director of that company in order to organize Lodes Aerosol Consultants, Inc., 730 Fifth Avenue, New York.

The firm's organization of specialists will make the latest aerosol information available to companies already in the industry, as well as to corporations wishing to expand or diversify by entering the field. The decision to undertake management studies in the area of proposed company expansions and acquisitions, stems from the firm's belief that the industry is now ready for this phase.

Establishment of the new firm which Mr. Lodes will direct as president, marks the entry into the aerosol field of a consultant group equipped to serve the industry in three broad areas vital to further growth: Technical assistance, consultation concerning the foreign aerosol market, and surveys relating to proposed business acquisitions.

"Our fast-moving $300 million aerosol industry is starting to come of age," Mr. Lodes stated. "With our growth have come many more problems and many more opportunities for the future. We feel that a comprehensive consultant service of this kind, dedicated to the aerosol principle, is not only timely but imperative."

Technical assistance by the new firm will cover the research, manufacturing and marketing phases of the aerosol industry with special emphasis on guidance to those wishing to enter the field.

"We are now on the threshold of the tenth anniversary of the low pressure aerosol," Mr. Lodes stated. "Many companies in the field have reached a point in their growth where they are now attractive to larger companies on the outside wishing to expand and diversify.

"A much overlooked area for widening the scope of the industry is the foreign aerosol market," Mr. Lodes said.

Joins Emery Research Staff

Appointment of John V. Killheffer Jr. to the research staff of Emery Industries, Inc. has been announced by Dr. R. G. Kadesch, director of research. Mr. Killheffer will be associated with the plasticizer group of the process research section under the supervision of Dr. C. A. Sprang.

L. Chandler Smith Exec. V.P.

L. Chandler Smith has been appointed executive vice-president of the Lucky Tiger Manufacturing Company. A member of the board of directors for the past three years, he will take charge immediately of new product development.

L. CHANDLER SMITH

VINCENT F. McLARNEY JR.

HARVEY E. GISS

Appointed by Armour

Harvey E. Giss has been appointed market research manager of The Armour Laboratories and Vincent F. McLarney Jr., process engineer.

C and C Appointments

J. R. Howell, R. W. Lindberg, and Julian Paul have been appointed assistant district sales managers of Carbide and Carbon Chemicals Company.

Mr. Howell, assistant sales manager of the Chicago District, joined Carbide in 1946 and has been a technical representative in the Milwaukee area since 1952. Mr. Lindberg, assistant sales manager of the Cleveland District, with Carbide since 1947, has been a technical representative in the Cleveland District since 1948.

Mr. Paul, assistant sales manager of the Boston District, joined Carbide in 1936. He has worked on sales and market development as well as application research of plasticizers. Since 1955, he has been a technical representative in the Boston District.

Kolmar New England Rep.

F. Gilbert McNamara has been appointed New England representative for Kolmar Laboratories. His address is 226 Fuller Street, West Newton, Mass.

Schering Research Bldg.

The one and a half million dollar biological research building of Schering Corporation is scheduled for occupancy about the first of the year. Located on Peloubet Street in Bloomfield, N. J., the new laboratory is adjacent to the company's other research laboratories and administrative offices.

Two additional buildings, a pilot production plant and a specially constructed sterile products building, are also nearing completion at the Union, N. J. location.

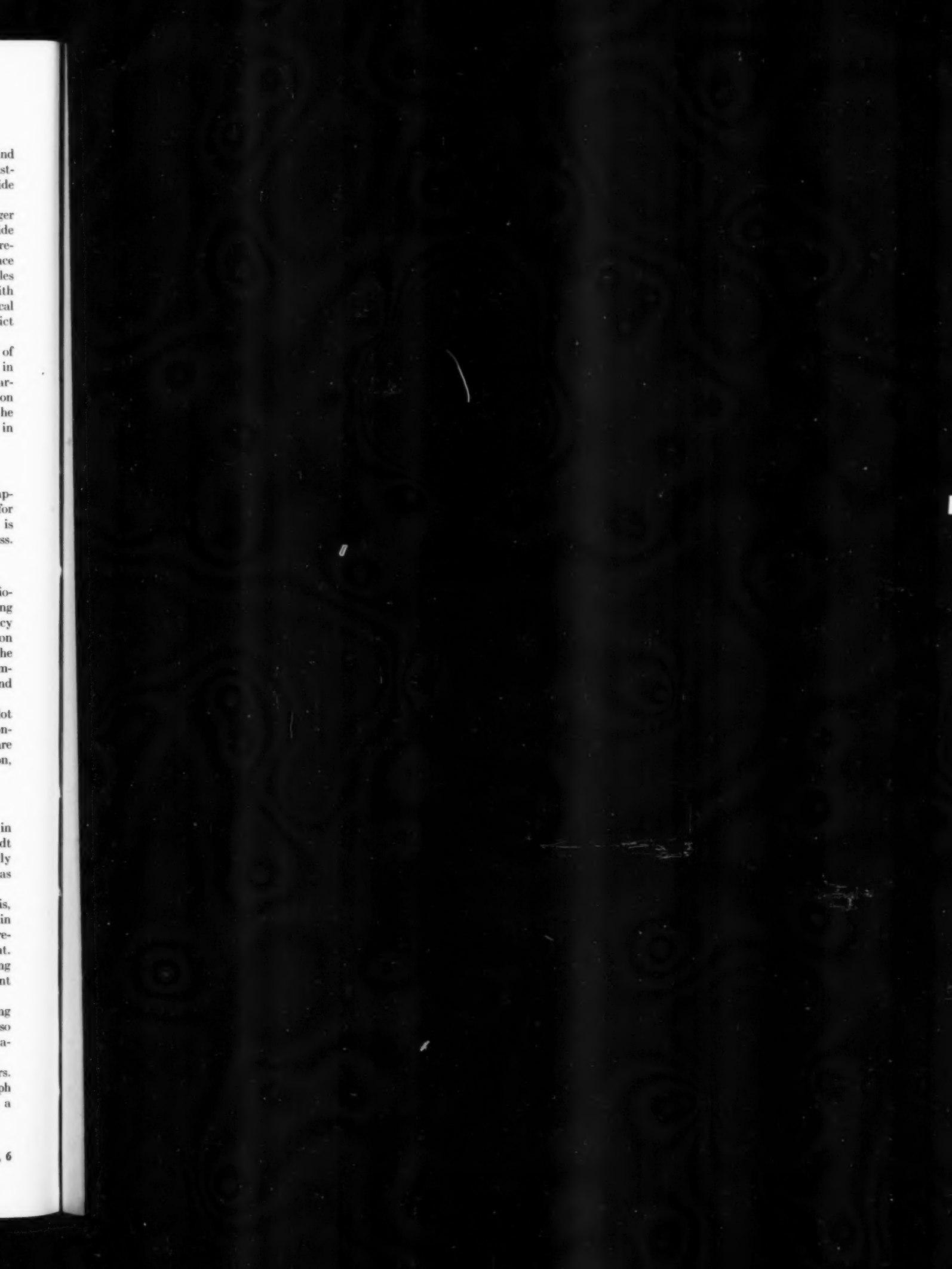
Erwin H. Doht

Erwin H. Doht, 62, vice-president in charge of purchasing at Mallinckrodt Chemical Works, died unexpectedly November 25 at his home, after he was stricken with a heart attack.

Mr. Doht, a native of St. Louis, joined Mallinckrodt in 1909, served in the infantry in World War I and rejoined the company as purchasing agent. He later became general purchasing agent and was named a vice-president in 1948.

A past president of the Purchasing Agents Association of St. Louis, he also was a director of the national organization.

He is survived by his widow, Mrs. Adele F. Doht, a daughter, Mrs. Joseph Ondr; a brother, Ferd Doht and a sister, Mrs. Louis J. Dau.



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Prepared by U. S. Industrial Chemicals Co.

U.S.I. CHEMICAL NEWS

Nov.-Dec. ★ A Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1956

Diester Lubricants Best So Far for Jet Aircraft

U.S.I. ISOSEBACIC® Acid Derivative Now Being Evaluated

A new diester formed by the reaction of U.S.I. ISOSEBACIC acid and 2-ethylhexyl alcohol is now being tested and shows promise as a lubricant for the fast moving parts of jet gas turbines. These lubricants must meet the stringent performance requirements of Military Specification MIL-L-7808 for satisfactory operation from 450°F down to –65°F – met most satisfactorily to date by diesters. The di-2-ethylhexyl ester of sebacic acid is most commonly used.

The chief advantage of the new diester is its derivation from unlimited petrochemical sources which can be counted upon to supply all needs at all times, even in emergency situations. U.S.I. ISOSEBACIC acid itself will be available in quantity when U.S.I.'s 10,000,000 lb. per year plant at Tuscola, Illinois comes onstream in mid-1957.

U.S.I. ISOSEBACIC acid is a mixture of isomers of sebacic acid in about these proportions:

2-ethyl suberic acid	72-80%
2,5-diethyl adipic acid	12-18%
sebacic acid	6-10%

In addition to the jet lubricant application, the material is being evaluated in vinyl resin plasticizers, polyurethane rubbers and foams, alkyd resins, nylon molding compounds and polyester resins. Samples can be obtained upon request.

Photographic Prints from Diazo Process Improved By Urethan Addition

The diazotype process for reproducing written and illustrative material on light-sensitive paper has been improved by incorporating carboxamides such as urethan (ethyl carbamate) into the light-sensitive diazo layer. Material can now be processed at high speed, yielding prints which are well developed, stable on storage and standing, bright in appearance and which show no tendency to curl.

Commercial diazo equipment is usually operated at or near its maximum speed of 30 feet per second in order to get the greatest throughput. At this speed, prints have in the past been frequently underdeveloped and subject to fading on storage or standing.

Now these conditions are being eliminated by incorporation of compounds such as urethan into the light-sensitive diazo layer. The preferred amount of urethan incorporated ranges from 250-350 grams per liter of diazo coating solution.

This development is but one of a growing number of applications for this versatile chemical. Urethan, first produced commercially by U.S.I., is also finding many new uses in medicine and as a starting material for chemical and pharmaceutical synthesis.

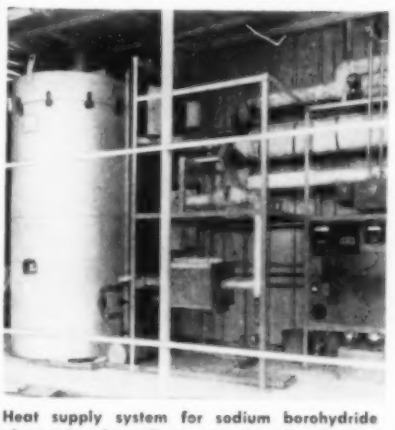
Dispersed Sodium Is Key to New Process for Rocket Fuels

Process Uses Sodium Two Ways — as Reactant and as Heat Transfer Agent

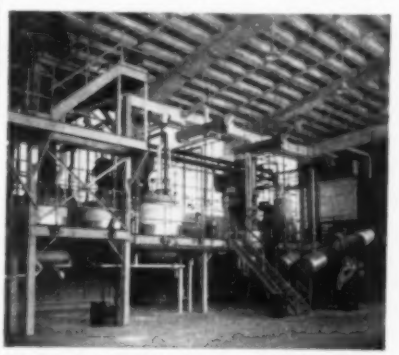
Sodium and potassium borohydrides are being produced by a new process which starts with metallic sodium dispersed in an inert liquid hydrocarbon. A semi-commercial plant now in operation is getting yields of about 95% on sodium borohydride (based on methyl borate), and up to about 90% on the potassium compound (based on contained KBH_4).

Borohydrides have been in the news lately as intermediates in the preparation of diborane, precursor of pentaborane rocket fuel. They are also achieving recognition among drug and fine chemical manufacturers as selective reducing agents for certain organic compounds, where undesirable side reac-

MORE



Heat supply system for sodium borohydride plant using the sodium-potassium alloy NaK as heat transfer fluid. Furnace, electromagnetic pump and heat exchangers are shown. Photo courtesy of the Callery Chemical Company.



Reactors (left) and condensers (right) for sodium hydride preparation. Photo courtesy of Metal Hydrides Incorporated.

Melting Points of Hafnium, Zirconium, Titanium Determined by New Technique

An improved technique for the accurate determination of melting points of metals in the temperature range 1500 to 2500°C has recently been announced which sets the value for zirconium at 1855 ± 15°C, for titanium at 1668 ± 10°C and for hafnium at 2222 ± 30°C. The improvements consist of gradient heating and refinements in cavity preparation to obtain true black-body conditions. Reproducibility of results is claimed to be ± 3°C.

Although M.P. values for zirconium and titanium have been obtained which are fairly constant from one investigator to another, the value for hafnium has varied widely. Temperatures of 1975 ± 25°C, 2430°C and 2230 ± 50°C have been reported. This new method was developed primarily to fix an accurate melting point value for hafnium, and has been applied to zirconium and titanium as a matter of interest.

The technique is a modification of the general tungsten suspension method, whereby a small specimen is suspended by a fine tungsten wire in a slender, induction-heated tungsten or tantalum cylinder, under vacuum. U.S.I. has special interest in this refinement since it is constructing two new plants to produce titanium and zirconium as well as a hafnium oxide by-product. The sodium reduction process used for these metals is also capable of producing hafnium.

Polyethylene Drums Okayed by ICC for Certain Shipments

Molded polyethylene drums have recently been approved by the Interstate Commerce Commission for commercial shipment of these regulated products: alcohols, acids or other corrosive liquids not specifically provided for, hydrochloric acid, hydrochloric acid mixtures, hydrochloric acid solutions, sodium chlorite solutions, hydrofluorosilicic acid, hydrofluoric acid, sulfuric acid, hypochlorite solutions, formic acid, formic acid solutions.

Those who wish to use polyethylene drums for the shipment of regulated products not listed above should apply to the Bureau of Explosives, 30 Vesey Street, New York, N. Y. for temporary permits. Nonregulated product shipments by road and rail were approved by the ICC early in 1955.

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Nov.-Dec. ★ **U.S.I. CHEMICAL NEWS** ★ 1956

CONTINUED

Sodium

tions must be avoided. A recent article also indicates possible use for sodium borohydride as a pulping agent in the paper industry.

Sodium Hydride Formed First

In the new process, molten sodium and a refined, high-boiling mineral oil are agitated with high shear and heated in a hydrogen atmosphere. This breaks the metal into tiny particles which react with the hydrogen gas to yield finely dispersed sodium hydride coated with oil. Methyl borate is then added to produce a mixture of sodium borohydride and sodium methoxide. The sodium borohydride is then solvent extracted and dried.

Where the potassium compound is desired, an aqueous potassium hydroxide solution is added to the mixture of sodium derivatives to precipitate potassium borohydride.

A circulating sodium-potassium (NaK) alloy system is used to heat the reaction mass. The liquid metal is heated in a furnace, dissipates its heat in a heat exchanger, and is circulated back through the furnace. Circulation is provided by an electromagnetic pump which has no stuffing boxes and is therefore not subject to the usual leakage and maintenance problems of ordinary pumps.

Dispersions Have Advantages

The sodium dispersion technique, originally developed to commercial feasibility by U.S.I. contributes several very important advantages in the new process:

- Rate of hydride formation is faster.
- The oil coating makes the hydride easier to handle.
- Reaction of the hydride with methyl borate is 10 times faster, proceeds efficiently, doesn't require excess hydride.
- Oil absorbs heats of solution and reaction, prevents decomposition which might result from overheating.

U.S.I. Technical Service Engineers, with experience gained in the company's sodium production facilities, have worked with two new borohydride producers in developing their plant and process designs.

Flexographic Printing Gets New "Voice"

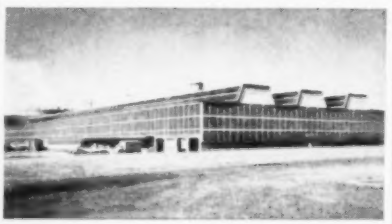
Alcohol Use in Inks Reviewed

This September the first trade magazine devoted exclusively to flexographic printing made its debut. Called "Flexography", the magazine was created to meet the demands of this fast-growing industry for information on materials, techniques and equipment.

Flexography, a form of letterpress printing, uses rubber plates instead of metal and fluid inks which dry by solvent evaporation. An article on these inks and their formulation appears in the first issue of the new publication and should be of interest to all printing ink manufacturers.

U.S.I. Filmex® Used in Flexographic Printing

Proprietary ethyl alcohol, according to the article, is the most versatile and commonly used solvent for the colorants and vehicles which go into flexographic inks. U.S.I. makes an alcohol formulation known as FILMEX® which was specifically designed for this application. It is carefully formulated to eliminate all trace of hydrocarbons which might soften or otherwise deteriorate rubber plates and rolls. FILMEX® is one of the most reliable solvents on the market for the purpose.



ZIRCONIUM, TITANIUM WILL BE MADE HERE
To house U.S.I.'s new 10 million pound-per-year titanium sponge plant as well as its 1.5 million pound-per-year zirconium sponge plant, the company has recently purchased this 175,000 square foot building at Ashtabula, O., near the existing U.S.I. sodium-chlorine plant. Acquisition of the giant building is expected to cut six months to a year from U.S.I.'s construction time table.

TECHNICAL DEVELOPMENTS

Information about manufacturers of these items may be obtained by writing the Editor, U.S.I. Chemical News.

Basic formulations for a new type aerosol skin bandage are now being offered to aerosol marketers and contract fillers in the drug field. After spraying on, the dry films reportedly adhere well, are transparent and tough **No. 1180**

"What's Available on Microprint Cards", a free 8-page booklet, can now be obtained which lists the technical literature which has been put out in this form. This bibliography is divided by subject, includes works on chemistry, mathematics and physics among others. **No. 1181**

A 125-page report on zirconium can be purchased which covers its chemistry, properties, production and fabrication—from both the economic and technological standpoints. **No. 1182**

New synthetic resin in 2 types — anionic and cationic — are offered as permaselective ion exchange membranes. Other possible uses are suggested by film properties of strength, toughness, flexibility and freedom from static. **No. 1183**

A summary on amino acid research can now be purchased which covers: the effects of DL-methionine supplements on animals; the effects of amino acid imbalance on maintenance and growth; and the amino acid needs of children. **No. 1184**

Acrylic thickener recently developed is shipped as high-solids, low viscosity acidic emulsion, is diluted and neutralized to clear, viscous, low-solids solution at point of use. Said to have long-term stability. **No. 1185**

Radioactive phenol — C^{14} (uniformly labelled) is now being offered as a tracer or synthetic intermediate in studying plant and animal chemistry, and as an aid in analyzing products such as insecticides, medicinals, plastics. **No. 1186**

Polyethylene-based ointments containing antibiotics and other pharmaceuticals are now available. Polyethylene replaces petroleum in part in these preparations, and is said to release more medicine at a slower rate. **No. 1187**

The dipotassium salt of (ethylenedinitrilo) tetraacetic acid is now offered as a chelating agent. Has better solubility in alcohol than the sodium salt. Material is a white solid, soluble in water. **No. 1188**

A new gun for extruding caulking compounds has been devised in which air pressure forces the compound out of a disposable polyethylene cartridge through a polyethylene nozzle screwed to it. Smooth, automatic operation is claimed. **No. 1189**

PRODUCTS OF U.S.I.

INORGANIC CHEMICALS:

Sodium, Metallic: cast solid in tank cars, steel drums, pails; bricks in barrels, pails.
Chlorine: liquid, in tank cars.
Caustic Soda: 50% liquid, in tank cars.
Sodium Peroxide: dust-free granules, in drums.
Sulfuric Acid: all strengths, 60° Baumé to 40% Oleum. Also Electrolytic grade to Federal specifications. Tank cars or tank wagons.
Ammonia: Anhydrous, commercial and refrigeration. Tank cars or tank wagons. Also Nitrogen Fertilizer Solutions.

OTHER PRODUCTS:

Alcohols: Ethyl (pure and all denatured formulas), Normal Butyl, Amyl, Fusel Oil; Proprietary Denatured Alcohol Solvents SOLOX®, FILMEX®, ANSOL® M, ANSOL® PR.

PETROTHENE® Polyethylene Resins.

Esters, Ethers and Ketones: Normal Butyl Acetate, Dibutyl Phthalate, Diethyl Carbonate, Diethyl Oxalate, Ethyl Acetate, Ethyl Ether, Acetone.

Intermediates and Fine Chemicals: Acetoacetarylides, Ethyl Acetoacetate, Ethyl Benzoylacetate, Ethyl Chloroformate, Ethylene, Ethyl Sodium Oxalacetate, Sodium Ethylate solution, Urethan USP (Ethyl Carbamate).

Animal Feed Products: Calcium Pantothenate, Choline Chloride Products, Curbay B-G® 80, Special Liquid Curbay®, DL-Methionine, Niacin USP, Riboflavin Concentrates, Vitamin B_{12} and Antibiotic Feed Supplements, Vacatone® 40, Vitamin A, D_3 and K_3 products.

Pharmaceutical Products: DL-Methionine, N-Acetyl-DL-Methionine, Riboflavin USP, Urethan USP, Intermediates.

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Management Forum

by Francis Chilson
INDUSTRIAL CONSULTANT

Christmas Carol

Reprinted by request. And a Merry Christmas to you all!

I'll never forget the time Uncle Dave Whitlock was selected to be Santa Claus for our annual school party. We used to have a play every year on Christmas Eve and the year I am telling you about, I was in it. I suppose my part was the "heavy lead" or whatever you call it, because when I heard Santa Claus' sleigh bells ringing, I was supposed to stand by the chimney and holler, "Whoa Vixen! Whoa Blitzen!" The chimney—"chimbley" we kids used to call it, was built around one of the schoolhouse windows with boards and two-by-fours, and our teacher, Miss Duffy, covered it all over with red paper that was printed to look like bricks. The bottom of the chimney was cut away so that it would look like a fireplace. Santa Claus was supposed to climb in through the school house window and down the chimney into the school room and distribute the presents in his big bag.

The reason Uncle Dave was elected to be Santa Claus was, that he had a pair of fawn colored road horses that we used to call "buckskins" but nowadays would be called Palominos. The plan was that Uncle Dave would fasten deer antlers to the horse's head stalls and would come galloping up to the schoolhouse in his slick new cutter that looked almost exactly like Santa Claus' sled except it was black. But nobody paid any mind to that. Anyway the kids were to sing "Jingle Bells" when they heard him coming, and when he pulled up outside the schoolhouse I was to start hollering "Whoa Donner! Whoa Blitzen! Whoa Vixen!" I had an important part in that play.

It was a beautiful night that night in 1910 when we had the play or whatever you might call it. Clear and cold and crisp and the moonlight was so bright you could easily read a book by it.

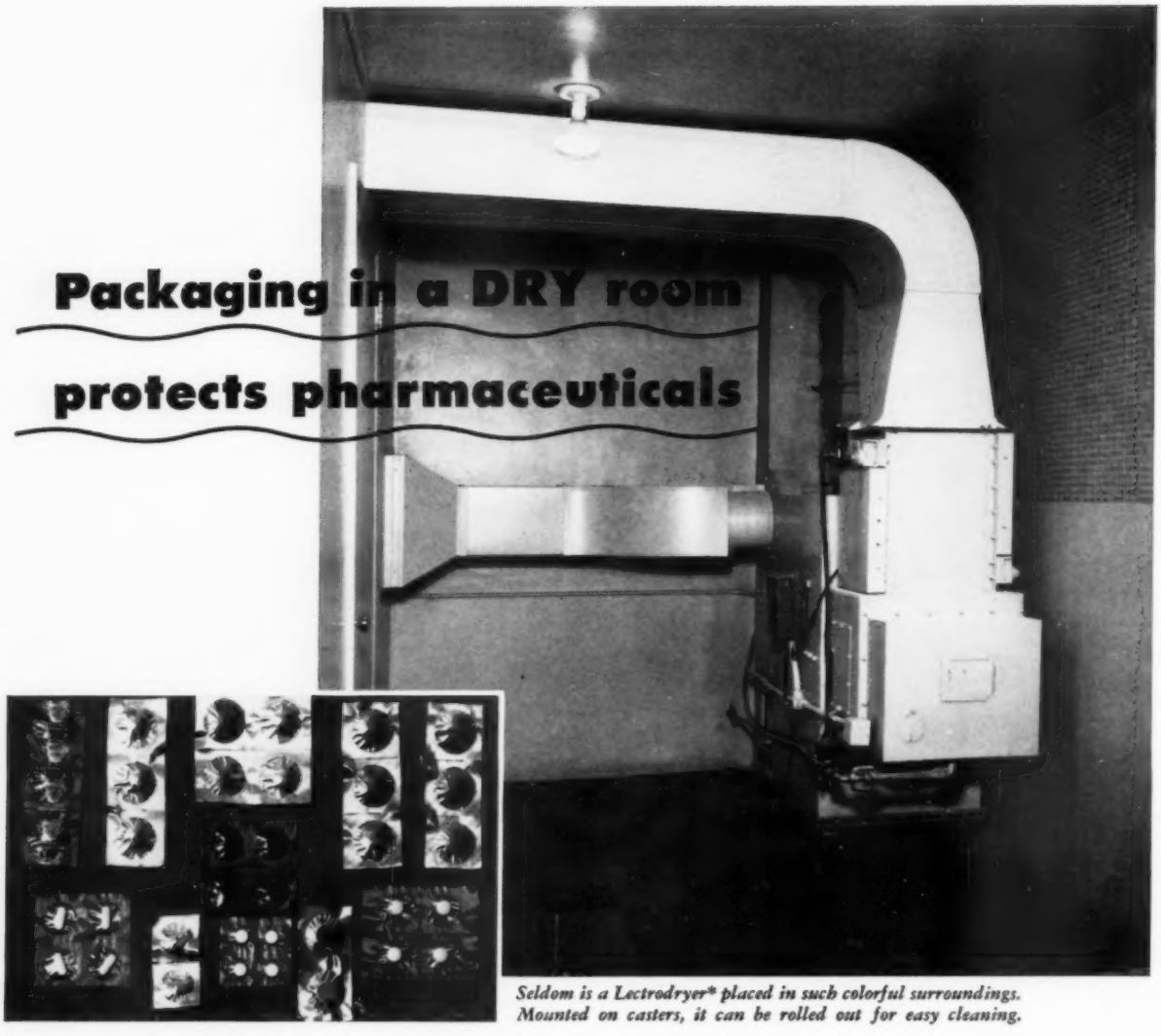
Uncle Dave got himself rigged out in the Santa Claus outfit Ma made for him. She made him a long white beard and she gave him a couple of sofa pillows to tuck inside his belt to pad him out because Uncle Dave was kind of skinny. So when Uncle Dave got himself all fixed up, he didn't come straight to the schoolhouse as Ma told him to; he stopped at the Half Way House and had himself a few slugs of "rot-gut" as Ma used to call all kinds of whiskey.

Everything was all set in the schoolhouse. We had a big Christmas tree that Dick Martin and I cut over beyond Smeader's Pond and we had to drag it all the way across the ice. It was decorated with candles and colored pop corn strings and tinsel and candy canes and all kinds of stuff. It really looked swell.

The schoolhouse was full of people. Most everybody around was there. And the oblong cast iron box stove was red hot because the night was cold. Pa and Ma were there and my sister Mary. Pa was all slicked up like everybody else. He was wearing a light colored cutaway coat (we used to call them Prince Alberts) and he had his grey moustache all trimmed up. He really looked fine and Ma looked pretty too. Everybody looked expectant, waiting to hear the bells of Uncle Dave's sleigh, because that was the signal for everything to begin. Us kids who were in the play were all rigged out in costume. I was one of the Magi and I had on a white turban that Ma made out of one of her white cotton stockings. Folks began to get a little fidgety because Uncle Dave was supposed to show up quicker than he did. He was in fact quite a bit late on account of stopping at the Half Way house to have a few slugs of whiskey.

But there was no mistake about it when we heard him coming. You could have heard those bells for twenty miles. Uncle Dave was standing up in the cutter hooting and hollering, with his white whiskers streaming in the wind and those horses were going so fast that Uncle Dave missed the schoolhouse altogether and was clean down to the South Road before he realized his mistake. Then he turned around and came jingling back. I looked out the window and saw

Packaging in a DRY room protects pharmaceuticals



Seldom is a Lectrodryer placed in such colorful surroundings. Mounted on casters, it can be rolled out for easy cleaning.*

● Contract packaging provided by General Packaging Service, Inc. often requires that pharmaceutical products be kept DRY until they're safely sealed in their wrappings. At this new plant in Paramus, New Jersey these moisture-sensitive products are packaged in a DRY room, held below 20% relative humidity.

It's no coincidence that the manufacturers of these pharmaceuticals insist on this protective DRYness. Most of these companies employ Lectrodryers to DRY the areas in which materials are processed and stored. In many cases, Lectrodryers DRY the air, gases and organic liquids entering into their processes.

Whatever your problem with unwanted moisture, Lectrodryer engineers can help solve it. For their advice, or for the book *Because Moisture Isn't Pink,* write Pittsburgh Lectrodryer Company, 309 32nd St., Pittsburgh 30, Pa., (a McGraw Electric Company Division).

In England: Birlec, Limited, Tyburn Road, Erdington, Birmingham.
In France: Stein et Roubaix, 24 Rue Erlanger, Paris XVI.
In Belgium: S. A. Belge Stein et Roubaix, 320 Rue du Moulin, Bressoux-Liege.

LECTRODRYERS DRY WITH ACTIVATED ALUMINAS

LECTRODRYER

* REGISTERED TRADEMARK U. S. PAT. OFF.

him coming up. The steam was going up three feet over the horses' backs and the antlers had slipped their moorings and hung down over the horses' faces. They were the damndest looking reindeer I ever did see.

The kids in the play all started singing Jingle Bells, but I could not remember the other damn reindeer's name. All I could remember was Whoa Blitzen! Whoa Blitzen. So I kept hollering Whoa Blitzen! fit to kill, until Miss Duffy, who seemed to be a bit annoyed about something, whispered to me fiercely, "For land's sake *Francis!* Shut up!"

In the meantime Uncle Dave climbed up the ladder and into the chimney opening which was made by lowering the top window. If he hadn't stopped at the Half Way House he would have known that with pillows stuck under his belt and that big bag of toys, he couldn't possibly have climbed down that narrow chimney without letting go of the bag and pulling it after him. Anyway he got stuck on the two-by-fours that supported the chimney and he started to swear. I head him say "*goddam,*" plain as day and most everybody in the schoolhouse did too because I looked down at Pa and he had his handkerchief over his face and his shoulders were shaking with laughter. Ma nudged him with her elbow and was looking at him fit to kill with her lips drawn tight as she was wont to do when she was really mad. I bet if she could have got ahold of Uncle Dave right then she'd have scalped him.

When Uncle Dave really began cursing in a hoarse mutter that everybody could hear as plain as day, Dominie Todd, who had been acting as a sort of master of ceremonies, and Miss Duffy reached up in the chimney and tried to pull Uncle Dave out. Uncle Dave, thinking it was us kids who were yanking at him, says, "leggo me, you little *sonsabitches.* You're pulling my pants off!"

You should have heard everybody laugh. Everybody but Ma. She was as mad as a wet hen and if it hadn't been in public I think she would have whacked Pa because he was laughing so much.

Miss Duffy's face was as red as a spanked baby's bottom. Dominie Todd's eyes bulged, and he looked like he was trying to pull his bald head down into his three chins. For a minute he looked like a redfaced turtle.

Pretty soon Uncle Dave came unstuck and landed at the bottom of the fireplace. "Goddamn!" he said. His white whiskers had come unstuck on one side and my little sister Mary hollered right out loud, "That aint Santa Clause! That's Uncle Dave!" I could have killed her.

But pretty soon everything got squared away and Uncle Dave got his whiskers stuck back and we had the play and the presents around the tree and the Christmas carols. The next day Uncle Dave came over to our house feeling a bit sheepish. At first Ma wouldn't talk to him but pretty soon she loosened up and wished him Merry Christmas and kissed him and said she might have known he'd disgrace the family.

Plant Replacement

I suppose that in the past twenty-five years of consulting practice I have examined critically more factories in the drug and cosmetic industries than most men who deal with these industries. As a result of this broad sampling, comprising as it does, the major portion of these industries, I am prepared to say that seventy-five per cent of the plants are badly designed, badly located, inefficiently equipped and generally inflexible. It is a good thing for these industries that production costs are a minor part of operating expenses. If they were there would be neither a drug nor a cosmetic industry.

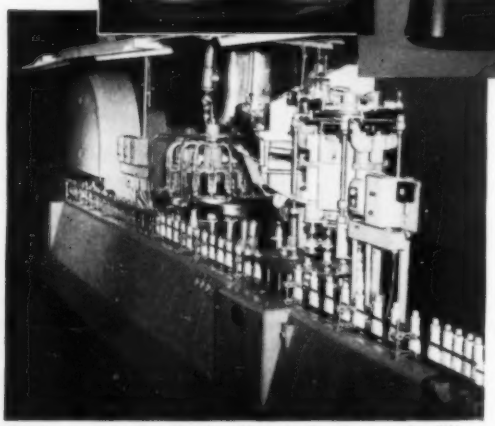
Notwithstanding every firm in these industries does its best to squeeze the last dollar out of production costs because production costs are tangible, measurable and controllable to a larger degree than marketing, administration and research costs, which together constitute the major part of the cost of doing business in our industries.

But there is a fallacy in this concentration on production costs for the reason that the money saved from production is immediately absorbed in working capital and used for other expenses and for profits, without any part of it other than normal depreciation, being reserved for the replacement of obsolete facilities. And it is the nature, location, design and equipment of these facilities that determine production costs, apart, of course, from the cost of materials. Although plant location seldom has an effect of material costs, there are some instances where this is the case. For example one of the reasons why the Cutter solutions plant was located in Chattanooga was that identical bottles bought from the same company, could be bought in Chattanooga at a saving of ten per cent over similar purchases in Berkeley, California, owing to the great difference in the labor rates of the two areas.

In 1936 I reorganized and modernized a plant in Philadelphia. The immediate effect of this project was to reduce direct labor payroll by $177,000.00 annually. There were other major savings in plant operating expenses as well but we shall ignore these for the purposes of this discussion. The potential capacity of that plant was tripled. This was established in the succeeding years by the fact that the capacity of that plant has been much more than tripled through further changes in layout and the addition of faster equipment. Ignoring the value to the company of all other considerations and having regard only to the direct labor saving, the company, if it had established an annual reserve amounting to the initial direct labor saving it would have now in the kitty $3,540,000.00 toward the construction of a new and proper plant.

But what happened? In 1936 the company was hard

REVLON'S WINNING ANSWER IS...



Synchronized bottling line handling air cleaning, gravity filling and rotary capping at Revlon's plant in Passaic, N. J.

PNEUMATIC for cleaning, filling, capping and labeling

There's a very practical side to REVLON'S brilliant success with its notably glamorous products. Smart advertising, promotion and merchandising has been matched by skilled production — including, in the packaging phase, highly effective use of PNEUMATIC equipment.

Cleaning, filling, capping and labeling of REVLON containers calls for precision performance, due to the "high style" nature of the containers, caps and labels. Gentle handling at uninterrupted high speeds is an in-built result of the advanced design and exceptionally expert engineering that are the very heart and soul of PNEUMATIC machines. America's leading producers of both wet and dry products use more PNEUMATIC equipment than any other make, by far — simply because PNEUMATIC means "lower cost per container" operation, every time.

PNEUMATIC SCALE CORP., LTD., 70 Newport Ave., Quincy 71, Mass. *Also: New York; Chicago; Dallas; San Francisco; Los Angeles; Seattle; Leeds, England. Canadian Division: Delamere & Williams Company, Ltd., Toronto.*

★PNEUMATIC

Packaging and Bottling Equipment

up and had not paid a dividend in the eight previous years. Understandably the new management's immediate concern was to build up profits as soon as possible and by every means possible, so that a dividend could be paid however small it might be. In other words the management took the immediate and not the long view. No provision was made for plant replacement other than normal depreciation on plant and equipment.

Time went on and, as the company grew, the original building became too small for warehousing as well as production, hence, substantial areas had to be rented wherever available for warehousing purposes. This meant the payment of rentals and high trucking expenses. In time the company purchased a site having a large one storey building on it. But instead of equipping the new facility for production and abandoning the old plant, it was decided to eliminate the outside warehousing and using the building on the site for that purpose. The outside rentals were eliminated but not the excessive trucking.

The decision to do this was made on the basis that production savings, which would be made possible through abandoning the old plant and setting up a new integrated plant, would not justify the necessary new investment!

Isn't that typical bookkeeper's thinking? Bookkeepers and all their ilk never see farther than the tops of their ledgers.

In this particular instance property values around the site of the original plant have increased so enormously that more than likely, the old building could be sold for more than enough to pay for removal and reconstruction on the new site.

The fact is that the old plant, if 1936 operating costs and operating volume are used as a basis of comparison, has generated enough profits to pay for several new plants. In 1936 if a Plant Replacement Reserve had been set up with only the direct labor savings of that year as the basis of the annual charge, there would now be no worry about financing or the practicability of establishing a new plant.

I am certain that the tax authorities would pass such a reserve when it can be shown that a new facility will increase profit to such an extent that in the end Uncle Sam will benefit as well as the tax payer. It has been done in connection with obsolescence reserves, which is what such an account really is. In any business it is ridiculous to assume that any plant will not need modernization, expansion or a complete removal within twenty-five years. A factory is after all only a composite machine, of which the equipment it contains, comprises its component parts. The parts wear out or become obsolete very rapidly and can be replaced. But there comes a time when it is folly to add new engines and new parts to an old body. Like rebuilding a 1940 Ford with 1956 parts.

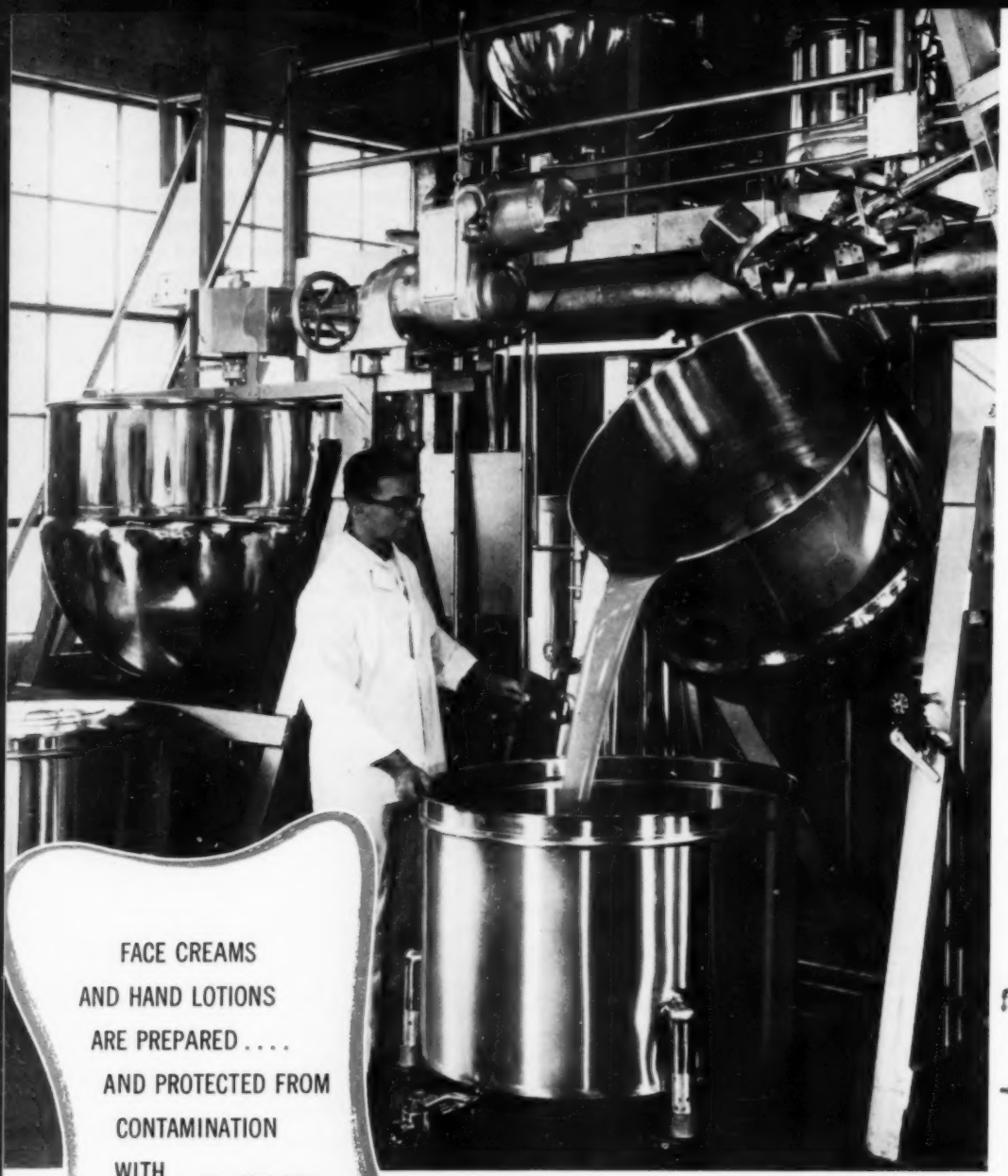
Yet this very thing was done in another old plant that I modernized about the same time. Before starting the job I recommended that the congeries of old, decrepit buildings be abandoned and a new one storey building built in the right location. The proposal was turned down. The old plant was over-hauled and re-equipped. Capacity was tripled and costs reduced and the management was satisfied that it was right in turning down my original proposal. Came the end of the war and more space had to be had in a hurry so an addition was made to existing facilities—a multi-storey addition like the old buildings. The cost of this addition was much greater than the cost of a new one storey building would have been ten years earlier had my advice then been followed. And had such a building been built, it probably wouldn't have had to be increased in size at all to provide additional capacity. Moreover when the time comes, and, come it must because this company has no more land left to build on, the new expensive addition will not increase the sale price of the property by a nickel. So obsolete are the buildings comprising this plant in shape, type, size, floor loading, heights and location on the site that I cannot imagine any manufacturer buying it for any purpose whatever in spite of the new addition.

Contract Manufacturing

My old friend Lessing Kole, chairman of the board of Kolmar Laboratories took me to task for failing to mention Kolmar as being one of the long established contract manufacturing and packaging firms. Far be it from me to short change an old friend. *But to tell you the truth, Lessing, I was thinking of pharmaceuticals only. You made your great success in cosmetics, particularly lipsticks and rouge, and I believe you are the only contract manufacturer in the United States, either in the cosmetic or the pharmaceutical industries, who has three plants in the United States and four in foreign countries. I suppose it is fair to chastise me for not keeping in touch. Undoubtedly with the big international operation you have, you are now in pharmaceuticals and all sorts of things. Some one of these days I'll drop off at Milwaukee and renew an acquaintance that has been so many years standing.*

Stockholder Psychosis

The presidents of many public corporations are afraid of their stockholders. Even when the best interests demand such action they will not approve expenditures which might temporarily reduce or eliminate a dividend. When business is slow they become alarmed and will curtail research and advertising expenses, which are the very items that will pull the business out of the doldrums. One company president told me that he got stampeded during a bad period and cut all expenses to the bone. The consequence was that it took the company five years to get back where they were especially in research. It is a fact that a year is too short a period to measure the ebb and flow of business. A bad last quarter can have a damaging effect on the whole year and incidentally on the



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FACE CREAMS
AND HAND LOTIONS
ARE PREPARED....
AND PROTECTED FROM
CONTAMINATION
WITH

LEE *STAINLESS STEEL* KETTLES

Assuring high quality control in the production of delicate creams and lotions, these Lee steam-jacketed stainless steel kettles are corrosion-resistant and easy to clean and keep clean.

Complete product mixing is obtained through the use of Lee double-motion center line scraper agitators, whose large stainless steel scraper blades continually move the contents from the heated walls toward the center, keeping an even temperature throughout.

Lee hydraulic operated cylinders—using your present water lines—give perfect control and safety not only in tilting the kettles for pouring and cleaning, but also in raising and lowering the tilting agitators.

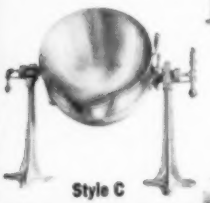
Descriptive bulletins for all of our specially-designed processing equipment available on request.

CW3T
Center-line Scraper Agitator Kettle
80 to 300 gal.

Quick Cooling Pan
50 to 200 gal.

Style A
Two-thirds Jacketed
5 to 500 gal.

Style B
Full Jacketed
10 to 300 gal.



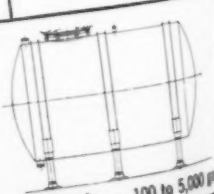
Style C
Two-thirds Jacketed
5 to 100 gal.

Pressure Kettle
Two-thirds Jacketed
40 to 200 gal.

Style CW
Two-thirds Jacketed
80 to 300 gal.

Pulp Tank
500 to 2,000 gal.

Mixing Tank
25 to 500 gal.



Storage Tank — 100 to 5,000 gal.

Technical bulletins fully describing these processing units gladly sent on request.

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METAL PRODUCTS CO., INC.
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Designers and Manufacturers of Corrosion-Resistant Processing Equipment for over 25 years.

company's reputation and on market prices for the company's stock. Yet the very action that caused a sharp drop in earnings may be the means by which the company's future earnings are insured. Our tax reports and our stock exchanges are all geared to an annual basis of reporting. Even worse than this is the system of quarterly reports and dividend payments. This imposes a hell of a strain on business earnings. It would be better if stockholders were paid on a three or a five year cycle. Their dividends could be increased by the cost of cutting out superfluous quarterly statements. There appears to be no reason why a company should not issue a five year common stock with a minimum earning guarantee. The stock brokers wouldn't like it of course. They get paid for buying and selling and the more investors get excited by poor interim reports the more money the brokers make.

Quote

Barbara Ward on the Arabs in the Sunday New York Times Magazine:

"Every invention upon which European ascendancy has been based came originally to Europe from the Middle East—the alphabet, ore smelting, the ship, the wheel, agriculture, mathematics, chemistry. The great techniques of civilization which Europeans further developed and carried around the world came to them from outside—and incidentally the Arabs, who were often the means of transmission of these techniques to Europe, had views on the Europeans of the tenth century closely resembling some Europeans' view on Africans today. They found them dirty, backward, gross, clumsy."

Bookkeeping Inadequacies

Such is the nature of bookkeeping practices that account is taken of savings only when they are direct, as in reducing labor costs, factory overhead expenses and material costs. Consequently engineers and production men are often stymied in their projects because they have no acceptable way of projecting potential savings or preventive savings. For instance when management is prevented from making an investment in the wrong type of building or equipment, or is kept from spending too much on a given facility, there is an inherent saving which sometimes can run into hundreds of thousands of dollars. But because the money was not spent and there is no way to record preventive savings on the books, no credit is given for such savings and the incidents are soon forgotten. In my consulting practice I have run into hundreds of cases where managements have been about to spend vast sums of money unwisely or uneconomically. This is commonplace for it happens on almost every job. Another type of saving that is not recorded, and is never as a consequence credited, is the value of increased productive capacity. When we engineers and production people change layouts and introduce new equipment that have the effect of increasing capacity, there is no record to indicate the value of the project when capacity increases. The only record that is kept is the record of investment and outgo at the time the project is initiated and that is against us because it invariably shows that overhead totals have increased with no contra entries for decreased labor and increased capacity. When new facilities are initiated costs usually go up for the first year of operation due to so many non-recurring charges that are entailed during the construction period. The bookkeepers scream bloody murder (especially when their advice was not sought before the project was initiated) but when the new facility is shaken down and running smoothly not a sound is heard from the accounting department. It is of course impossible to record expenditures that were aborted and not made and this is also true of intangible values like increased capacity with the same or less space.

But when a new facility is running smoothly you engineers and production men should cost out your production at old unit costs as measured against the new. Your management would like to know. But be sure the figures are based on the facts. I know one case where the plant manager was given holy hell because his unit costs in the new plant had actually gone up. The management got excited with the bookkeeper's figures. Analysis showed that in the period between the old and the new facilities freight and trucking rates had increased almost twenty per cent, labor rates had increased fifteen per cent and material costs had increased ten per cent. The truth of the matter was that the new facility had absorbed almost all these increases in their entirety.

Development Chemists Attention

Monsanto Chemical Co., Dayton 7, Ohio, Research and Engineering Division, have developed a new form of alumina which might be of interest in pharmaceutical and cosmetic preparations. "This material is characterized by a very fine plate like structure, the particles ranging up to 4 microns in maximum dimensions, and from .001 microns down in thickness. This alumina has a very low bulk density and has the very remarkable property of retaining its bulk characteristics upon wetting and redrying. It exhibits exceptionally high oil absorption, at the same time being adsorbent. The pH of a two per cent solution of this material is 4.5." Sounds like a most interesting material and if you are interested get into touch with C. L. Lightfoot, Manager New Products Development Department. Tell him I sent you.

Four-Way Blending Colloid Mill

Four distinct blending actions are performed simultaneously in an Eppenbach colloid mill that also offers simplicity of design, fast dispersing and homogenizing rates, recirculating action and low maintenance, according to its manufacturer, Gifford-Wood Co., Hudson, N. Y.

Available in a wide range of sizes, the Eppenbach

colloid mill is designed for emulsifying, mixing, homogenizing and grinding any fluid or semi-fluid substances.

It has wide application in such industries as cosmetics, pharmaceuticals, protective coatings, foods, heavy chemicals and plastics.

The Eppenbach colloid mill performs four distinct blending actions, although only one moving part—the rotor—is involved. This design simplicity minimizes the number of parts that may need to be replaced and permits field repair, reducing downtime. It also makes the mill simple to operate.

In operation, unrefined material is fed into the homogenizing zone, where upper turbine blades first subject the material to a high velocity whirling action. This breaks the slurry up into minute globules.

It then passes through adjustable clearances between the rotor and stator mechanism. The upper part of this zone contains teeth which subject the product to a mechanical shearing action. The lower part of this same area then subjects material to a further shearing action of a hydraulic type.

The material is then subject to a final refinement by a discharge turbine. It then passes into an outlet pipe, where it is either drawn off or fed back into the feed hopper for further refining.

The blending action can be closely controlled and regulated by a micrometer adjustment device. A calibrated index ring is used to control the clearance between the rotor and stator, and can be adjusted from .0005" to .125", depending on the degree of fineness desired. An operator can make this adjustment while the mill is in operation. As a result of this numerical record, similar mixing results can easily be duplicated at a later date.

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is provided by water jackets which surround the hopper and mixing elements of the mill. Contact parts in the mill may be made of stainless steel, or other materials of construction, depending on the product to be processed. Little maintenance is required of the mill, since it is designed to clean itself by means of its recirculation system. The mill can easily be modified by means of a pressure head to provide continuous operation.

Eppenbach colloid mills are available in a wide range of different sizes, both laboratory and production models with processing rates ranging from ½ to 2,000 gal. per hr. Mills are available in direct drive or belt drive installation, capable of producing any specified shaft speed. Standard mills are vertically mounted, but horizontally mounted units are also available.

Sprout-Waldron Gyro-Shaker

The most recent addition to the growing Richmond/Sprout-Waldron line of sifting equipment is the new Gyro-Shaker. This unique machine is ideal for applications where all points of the screen must be readily accessible for rapid cleaning. It is particularly adaptable where the process lay-out requires a minimum overall height and a highly efficient single screen is preferred to a multi-sieve stack.

When process temperatures preclude the use of anything but carbon steel or stainless steel construction, or where dust-tight construction is mandatory, the Gyro-Shaker will do an excellent job. It is already in use in several high capacity applications requiring relatively coarse meshes and for the handling of materials which sift with relative ease.

Here's how it operates: Material enters the Gyro-Shaker through an inlet at the motor end of the removable top cover and travels down the inclined removable screen. All oversize material is discharged through a pitched outlet in the bottom of the shaker case. All material which has sifted through the mesh openings is discharged through an opening in the bottom of the case or falls to a second screen if an additional separation is required.

The Gyro-Shaker case and drive are flexibly mounted on a base consisting of a floor plate, a vertical tubular steel column, and a suspension frame. Drive force is developed by an eccentric lead balance weight attached to a vertical shaft which is mounted on two heavy-duty, self-aligning roller bearings. As the shaft is rotated, the eccentric weight imparts a flat horizontal gyratory oval motion at a frequency of 610 to 630 RPM.

The unit is constructed of carbon steel with top cover and screen frame of aluminum for ease of handling. Wherever product contamination or corrosion are important factors for consideration, the parts in contact with the product can be constructed of stainless steel. If the product is of such a nature as to require sifting under inert gas pressure, the unit can be made gas-tight.

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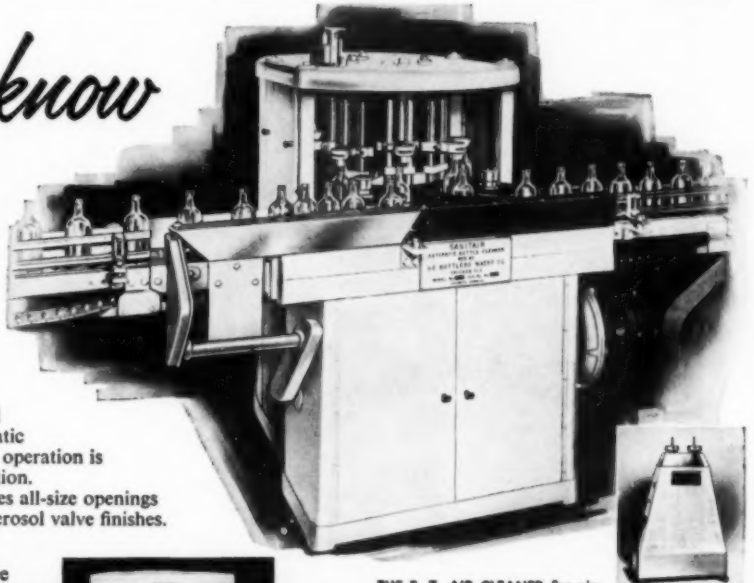

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Sedative Mixture

Criteria for a satisfactory daytime sedative require that the "usual therapeutic dose" of the medication will control the symptoms of anxiety or nervousness in a predictably high percentage of cases. This should occur without the occurrence of daytime drowsiness, impairment of mental processes, sluggishness of movement or loss of libido. Therapeutic dosage should not influence the cardiovascular and respiratory systems; influence liver or renal function; or depress any vital function of the body. Precautions in the administration of the drug should not be required. A medication should be easily administered and well tolerated. Idiosyncrasies should be non-existent or rare. Tolerance and cumulation should be minimal. Finally, habituation and addiction liability should be small or non-existent.

These criteria represent the ideal. According to R. C. Batterman, P. Leifer and A. J. Grosman (*Am. Pract.* 7:1795, 1956) experiences with a mixture of acetylcarbromal, mephenesin and reserpine indicate that the ideal has been approached to a considerable degree by this combination. Each tablet contains 200 mg. of acetylcarbromal, 150 mg. of mephenesin and 0.05 mg. of reserpine. The effectiveness of the preparation in 80 per cent of the 197 patients with the negligible occurrence of untoward reactions reflects the clinical usefulness of this preparation as a daytime sedative. Chronic administration to date has been free of cumulation, tolerance, toxicity, mental changes, idiosyncrasies or other undesirable effects. Impaired liver and kidney function did not affect the responsiveness of the patient.

Long Duration ACTH

L. Rosa, G. Bergami, et al. (*Riforma med.* 70:641, 1956) studied the effect of corticotropin (ACTH) combined with a phosphate of polyphloretine (AH 51). Local metabolism of ACTH was considerably delayed. The effect of a dose of 20 I. U. per day on 10 patients with asthma lasted 24 to 48 hours. Maintenance dose was 5 I. U. A high dose of 30 I. U. had an effect for three or four days on three patients with urticaria. Eosinophilia dropped to about 50 per cent. The eosinopenic effect lasted from 72 to 96 hours. The administration of one dose of the drug increased the elimination of the 17-ketosteroids. The effects of this new ACTH combination last four times longer than those of plain ACTH for beginning doses; they last eight times longer for maintenance doses. The combination was well tolerated and did not cause side-effects.

Enteric-Coated Aspirin

Forty-two patients suffering from osteo- and rhematoid arthritis and allied conditions were given an enteric-coated aspirin preparation by A. G. Sprecher (*Am. Pract.* 7:1801, 1956) as an adjunct to other treatment.

The medication produced epigastric distress in one patient, who had also been intolerant of plain aspirin. One patient experienced colonic irritation during the study, but to a lesser degree than previously with plain aspirin. The other 40 patients had no gastro-intestinal complaints during the entire period of the study. No patient who could tolerate plain aspirin failed to tolerate the enteric-coated aspirin.

Marplan Anticholinergic

Marplan, an anticholinergic and antispasmodic agent, has been used by A. R. Hufford (*Postgrad. Med.* 20:514, 1956) in conjunction with diet and other medication in 112 cases.

Chemically the drug 1-methyl-3-benziloyl - oxyquin - uclidinium bromide.

In comparison with the potency of this drug, its side effects have not been excessive. Systematic manifestations of toxicity were not observed in any of the cases. The drug is very effective in controlling gastric spasm and hyperacidity, in promoting healing of peptic ulcers, and in correcting neuromuscular imbalance.

A combination of Marplan and Noludar, a new sedative and hypnotic, seemed to be of value in cases in which the emotional involvement was pronounced.

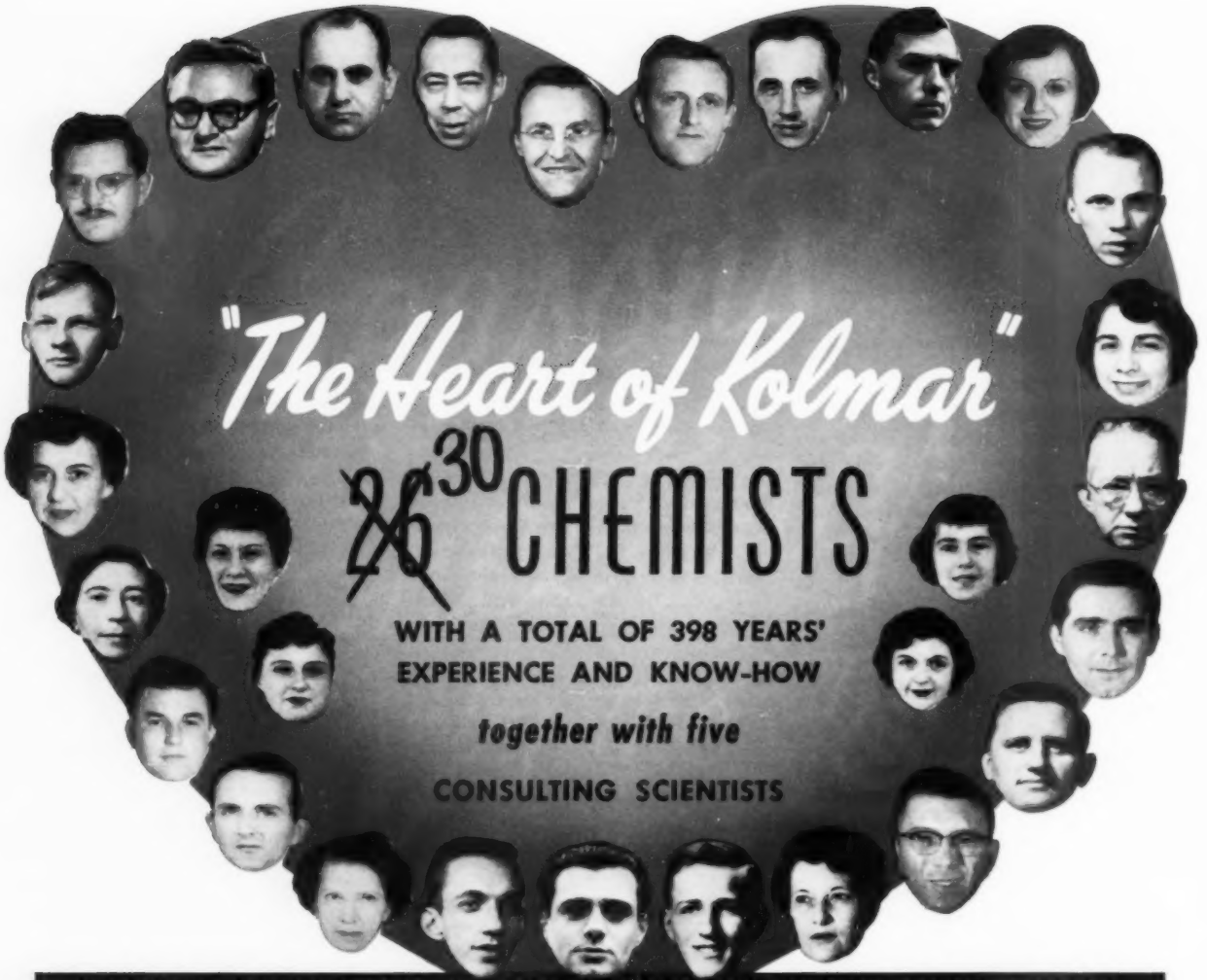
New Antiarthritic Steroids

An American Cyanamid research group headed by Seymour Bernstein (J.A.C.S. 78, 5693, 1956) reported a new group of cortical steroid derivatives with high potency and reduced side-effects, according to rat assays. No clinical results are given as yet. The compounds are related to fluorohydrocortisone and to fluoroprednisolone, but with additional substitution of a 16-hydroxy group. This 16-hydroxylation is said to abolish completely the sodium retention which is a major side reaction with other steroids.

In the rat liver glycogen assay, 16β, 21 - diacetoxy - 9α - fluoro - 11β,17α - dihydroxy - 4 - pregnene - 3,20 - dione possessed an activity 4-8 times that of hydrocortisone; the free steroid had a 3-5 fold activity. In the same assay, 16β,21-diacetoxy - 9α - fluoro - 11β,17α - dihydroxy - 1,4 - pregnadiene - 3,20 - dione and its free steroid were found to be 15-36 and 13 times more active than hydrocortisone, respectively.

New Anticholinergic

Significant reduction of gastric acidity, secretory volume, and motility in healthy male subjects is achieved by oral administration of BL700B (α,α-diphenyl-γ-dimethylamino-butyramide-ethobromide). R. D. Judge and associates (*J. Lab. Clin. Med.* 47:950, 1956), find that BL700B in doses of 10 to 25 mg. is superior in gastric effect to atropine sulfate in amounts of 0.6 to 1 mg. Tolerance to the inhibiting effects of BL700B does not develop when 12.5 mg. of the compound is given four times daily for seven days. Significant side effects are not observed after treatment.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Thyroid and Dental Caries

Evidence indicating that activity of the thyroid gland is related to dental decay in animals was reported by D. Bixler, J. C. Muhler and W. G. Shafer of Indiana University in The Journal of the American Dental Association.

The research team based its report on a study of rats to determine if destruction of the thyroid would result in an increase in dental decay and conversely whether heightened functioning of the thyroid would result in a decrease.

"The function of the thyroid gland is related to the incidence of dental caries (tooth decay) in the rat," the scientists reported.

"Evidence in support of this is found in this study when desiccated thyroid (to stimulate activity) was furnished the rats in the diet and when radioactive iodine was administered to decrease thyroid function.

"In the former instance there was a significant reduction in dental caries whereas in the latter instance there was a significant increase in caries."

Premenstrual Tension

Forty-three patients between the ages of 14 and 50 years with premenstrual tension were given by T. H. McGavack et al (*Am. J. Obst. & Gynec.* 72: 416, 1956) a compound in tablet form, consisting of 50 mg. of 2-amino-2-methyl - 1 - propanol - 8 - bromo - theophyllinate and 30 mg. of pyrilamine maleate (neoBromth).

Slight, moderate, pronounced, and complete relief were obtained by eight, nine, 14, and four patients respectively. Eight patients were therapeutic failures. Of all the manifestations, water retention was the one most consistently favorably influenced, and the nervous and mental symptoms of tension were next. No undesirable side-effects were observed with doses of up to four tablets (320 mg.) four times daily (a total daily dose of 1,280 mg.) for four consecutive weeks of administration.

Monothiouronium Derivatives

Octyl-, tetradecyl-, and coco-*mono*-isothiouronium chlorides have been studied by M. Volini, R. K. Stubbs and N. Ercoli (*Antibiotics and Chemother.* 6: 603, 1956) for their chemotherapeutic activity. All three compounds showed definite activity on the course of the *T. equiperdum* infection of mice, and, among them, the cocoisothiouronium derivative appeared the most effective. No activity was encountered in the *B. novyi* and *Str. hemolyticus* infections. All three preparations showed a marked in vitro effectiveness against trypanosomes, a spectrum of fungi, and gram-positive and gram-negative bacteria.

New Anti-Arthritic Steroid

Development of a new hormone with 12 to 18 times the potency of cortisone and hydrocortisone in fighting inflammatory diseases such as arthritis, but lacking the chief side effects of these drugs, was announced before a meeting of the American Rheumatism Association at the National Institutes of Health.

The new drug, called Medrol, is known technically as 6-methyl-delta-1-hydrocortisone, has great potential usefulness as an improved agent in the treatment of arthritis and a host of inflammatory diseases, including many allergies such as asthma and hay fever.

Members of the Upjohn research team which synthesized Medrol included, E. M. Glenn, R. O. Stafford, W. W. Byrnes, S. C. Lyster, L. E. Barnes, G. H. Lund, M. M. Meinzinger, and B. J. Bowman of the Department of Endocrinology; G. B. Spero, J. L. Thompson, B. J. Magerlein, A. R. Hanze, and J. A. Hogg of the Department of Chemistry; H. C. Murray and O. K. Sebek, Department of Biochemistry.

Oral Hemorrhoid Treatment

A British product, Parmacetyl, is being promoted as an oral treatment for hemorrhoids. Each tablet contains 162 mg. of ethylhydroxyethyl cellulose, 130 mg. of magnesium hydroxide and 324 mg. of spermaceti. Clinical trials are claimed, but not reported.

New Ulcer Treatment

An analysis of 195 case histories of gastric or duodenal ulcer treated by M. Ant (*N. Y. Physic. and Amer. Med.* 47: Nov. 1956) with Rabro tablets for three to twelve weeks showed clinical benefit in 179 cases (92 per cent) and X-ray improvement in 160 of 186 roentgenologically studied cases (86 per cent). The results in ambulatory cases were almost as satisfactory as for bed patients.

The distinguishing features of this treatment, as compared with ordinary antacid methods, are rapid relief of pain and spasm in less than a week, healing of the ulcer niche in most cases, and satisfactory use by ambulatory patients.

Rabro tablets, widely used in Europe for the treatment of peptic ulcers, have been introduced recently into the United States. The composition per tablet is as follows:

Glycyrrhiza Extract	**300 mg.**
Light Magnesium Carbonate	**400 mg.**
Bismuth Subnitrate	**350 mg.**
Sodium Bicarbonate	**200 mg.**
Frangula	**25 mg.**
Calamus	**25 mg.**

Comment: This follows a report in the British Medical Journal in 1955 by R. R. Hamilton, abstracted in this department in November 1955, in which Roter tablets, identical with the above Rabro tablets but not including the licorice root extract, were reported to be beneficial in the treatment of peptic ulcer.

New Pharmaceuticals

Vastron Forte (Henry K. Wampole Co.), intended to reduce blood cholesterol levels, consists of capsules containing nicotinic acid, other B-complex factors and ascorbic acid. It is available in bottles of 100.

Rolicton (G. D. Searle & Co.) is an orally active non-mercurial diuretic, the active ingredient being 1-methallyl-3-methyl - 6 - amino - tetrahydropyrimidinedione, brand of aminoisometradine. It is available in bottles of 100 and 500 tablets, each of 400 mg.

Vistabolic (Organon) contains 1.0 mg. of hydrocortisone, 10.0 mg. of methylandrostenediol and 0.5 U.S.P. Unit of vitamin B_{12} with intrinsic factor concentrate in each tablet, while each cc. of the injectable product contains 1.0 mg. of hydrocortisone acetate, 10.0 mg. of the methylandrostenediol and 20 mcg. of vitamin B_{12} activity as supplied by U.S.P. Liver Injection. The preparation is intended to provide anti-stress, anabolic and nutritional support for geriatric patients. The tablets are available in boxes of 30, the injectable as 10 cc. vials.

Seco-Synatan (Irwin-Neisler) contains in each tabule, 17.5 mg. d-amphetamine tannate and 35.0 mg. of secobarbital and is intended to provide slow release and long duration amphetamine effect for the symptomatic control of anxiety, depression and appetite. It is supplied in bottles of 50 and 500 tabules.

Regutol (Pharmaco, Inc.) contains 100 mg. of dioctyl sodium sulfosuccinate per tablet and is intended for use in correcting constipation. It is available in packages of 30 and 100 tablets.

Compounder's Corner

Hair Conditioner

An effective means of solving the problem of static electricity in the hair is available through the use of certain cream rinses which contain a cationic compound to dispel the electrical charges. A product which has been found particularly useful in this application is Rohm & Haas Company's Triton X-400. This is a quaternary ammonium compound with a higher alcohol, and when incorporated in cream hair rinse formulations, it prevents the build up of excessive charges of static electricity in the hair.

This has been demonstrated in a study conducted in Rohm & Haas Company's research laboratories. Tests made in the course of this investigation showed that when hair carrying a high static charge (in the order of 400 volts per unit of rubbed surface) was treated with a Triton X-400 rinse, the charge was reduced to such an extent that the hair became readily manageable.

Triton X-400 offers other advantages in hair rinses. It neutralizes soap remaining in the hair following a shampoo, eliminating the dulling effect of soap residue and bringing out the highlights of the hair. It also softens the hair, making it easier to comb. Even naturally unruly hair stays in place better following the rinse. Furthermore, this fine lubricating effect is imparted without giving the hair a greasy or unnatural appearance.

Deriphat

Deriphat (Chemical Division, General Mills, Kanakakee, Illinois) is an ampholyte surfactant now being used in at least one nationally distributed shampoo. It is available as a solid (150A or 160) and as a solution (150B). Because of its novel chemical structure it combines a number of useful attributes. Deriphat is a long fatty acid chain terminated by a carboxyl group, in which respect, as the sodium salt, it has the chemical structure of an ordinary soap. The chain is interrupted, however, by the insertion of a secondary amino nitrogen so that the compound simultaneously has basic properties. As a result of this structure, along with its foaming and detergent powers, the compound confers high viscosity and "body" to shampoos containing it; it has some corrosion inhibiting properties and is now under investigation for use in aerosol shampoos; its basic nature parallels some antibacterial action; and finally, the compounds are substantive to skin and hair and act as conditioners.

Sugar Ester Surfactants

Berkeley Chemical Corp., Berkeley Heights, N. J. has signed a licensing agreement with the Sugar Research Foundation for the manufacture of sucrose mono fatty acid ester surfactants. Pilot plant operation can be expected to begin in the near future. The mono fatty acid esters of sucrose, as previously announced, are nonionic, tasteless, solid surfactants which offer considerable promise as emulsifying and wetting agents in the cosmetic and pharmaceutical industries.

Pyridoxine Esters

The heat stability of several fatty acid esters of pyridoxine and their solubility in fats was tested by T. Sakuragi and F. A. Kummerow (*J. Am. Oil Chem. Soc.* 33:116, 1956). Short chain fatty acid esters of pyridoxine, such as pyridoxine triacetate, and long chain saturated fatty acid esters of the vitamin, such as pyridoxine tripalmitate were almost insoluble or had a rather limited solubility in fats. An improvement in solubility was observed when pyridoxine was partially esterified with palmitic acid, fully esterified with a long chain unsaturated fatty acid, such as linoleic acid, or when it was esterified with a fatty acid of intermediate chain length (C_6, C_8 or C_{10}). Free pyridoxine and the acetate were destroyed by heat when mixed in a fat and heated at 205-210° C. A profound improvement in heat stability in pyridoxine was noted when one palmitoyl group was introduced, and the ester became completely stable when it was fully esterified with a saturated fatty acid of C_{10} or longer chain length.

Liquid Shampoo Patent

U. S. Patent 2,770,599 issued November 13, 1956 to H. Henkin and assigned to the Colgate-Palmolive company covers an opaque liquid shampoo consisting essentially of about five to 35 per cent by weight of a detergent consisting of a sulfated or sulfonated water-soluble anionic, about 0.5 to 10 per cent of behenic acid present as an opacifying and stabilizing agent, about 0.25 to three per cent of a hydrogenated castor oil having a melting point above 180° F. and enough water to prepare a fluid shampoo having a pH of 5 to 7.5.

L-Lysine

Chas. Pfizer & Co., Inc. announces the availability of commercial quantities of l-lysine. The hydrochloride is a pure white, crystalline, 80 mesh powder with a guaranteed potency of not less than 98 per cent. Fermentation techniques developed by Pfizer produce l-lysine containing none of the biologically inactive d-isomer.

Liquid Lanolin

Liquid lanolin is a 100 per cent extract from solid lanolin anhydrous B.P., and contains no diluent additive or extenders.

It is a highly viscous liquid of a color which varies from a light greenish opaque yellow to a transparent brown yellow, and is composed of the liquid neutral low melting point lanolin esters separated from solid lanolin by special fractionating techniques, so that the product is actually a new liquid wax. Liquid lanolin is particularly interesting

in that its physical form changes notably from a viscous transparent or opaque liquid to a transparent or opaque gel over a few degrees change in temperature, so that at certain temperatures it has the appearance of normal lanolin while retaining its own unique properties in actual use and behavior. Like solid lanolin, it is practically saturated with regard to oxidation.

Liquid lanolin may be blended with mineral oils in high concentrations, to give homogeneous, transparent or semi-transparent liquids from which there is no separation on storage.

It is insoluble in acetone and ethyl alcohol, water, glycerin and glycols, but soluble in hydrocarbons and aromatic solvents.

Liquid lanolin possesses properties which make it a valuable adjunct to the range of cosmetic raw materials. It can act variously as:

1. Emollient and softening agent for dry and easily irritated skins.
2. Water-in-oil emulsifying agent.
3. Auxiliary emulsifier for oil-in-water emulsions.
4. Aid to the solubilizing of dyestuffs, e.g. lipsticks.
5. Wetting and spreading agent in non-aqueous media.
6. Solvent and carrier for many lipid and similar substances.

Last but not least it makes cholesterol available in a liquid ester form, easily compounded in cosmetics and pharmaceuticals.

Liquid lanolin is incorporated into formulations in exactly the same way as ordinary solid lanolin, except of course, that heat is not required to melt the product, or where all-liquid ingredients are concerned. It is perfectly compatible with all the oils generally used in cosmetic formulations.

Liquid lanolin is a product which can obviously and beneficially be used to replace lanolin in many formulations, particularly baby oils and creams.

These products protect sensitive young skin against chafing and infection, and keep it supple. The emollient powers of liquid lanolin make it an automatic choice for inclusion in baby preparations, while its liquid nature insures easy spreadability.

The presence of lanolin in shampoos is useful, but it has been found rather difficult to incorporate more than token quantities without affecting the volume of foam produced, or producing incompatibility. However, 10 per cent liquid lanolin is readily dispersed in the sulfated fatty alcohols forming the basis of most modern shampoos, and serves to combat the degreasing effect of these synthetic detergents. The hair, as a result, retains its natural softness and high-lights.

Solid lanolin is an essential ingredient of skin creams for dry skins, and replacement of solid lanolin by liquid lanolin greatly reduces the tackiness often produced by these creams.

Conditioners containing cholesterol are often recommended for treatment of dry scalp, so that the cholesterol content of liquid lanolin is an important feature when this material is used in hair creams. Creams containing liquid lanolin spread smoothly and help to impart a well-groomed healthy appearance to the hair, while this new material is becoming a regular ingredient in the preparation of aerosol hair sprays and other aerosol-applied cosmetics, and is the basis of simple hair oil containing only lanolin and refined mineral oil.

The advantages of using solid lanolin in lipsticks are its emolliency, solubilizing effect on bromo acids, suspending action on pigments, and preventiong of "sweating." Again, excessive stickiness cannot be tolerated. The advantages of lanolin with its freedom from rancidity are found in liquid lanolin, which can be used to partially or wholly replace castor oil in lipsticks.

The "sweating" of oil droplets is also a troublesome feature in cake make-up and liquid lanolin will be found to be an effective safeguard, while aiding dispersion of the pigment present.

The excellent skin-penetrating properties of lanolin have been widely utilized in the preparation of ointment bases; simple bases may be easily prepared by shaking liquid lanolin with water to give soft, smooth water-in-oil emulsions.—E. S. Lower, *P.E.O.R.* 47: 403, 1956.

Vitamin B Stability

Storage experiments extending over three to eight years have been carried out by F. Wokes and F. W. Norris on representative samples of vacuum-dried dietetic specialties; bakery products; vitamin concentrates with a basis of malt extract; and multivitamin capsules in which B vitamins have been claimed. Changes in the contents of those vitamins have been followed by physiochemical and microbiological assays. The stability of the vitamins has been found to be affected by exposure to air as well as by temperature and relative humidity. For the four types of products examined the main precautions to be taken during storage involve avoidance of exposure to atmospheric conditions, especially in hot, humid climates. When riboflavine or other photolabile vitamin is present, protection against the action of light is also desirable. Maximum stability is best achieved by storing the products in air-tight containers in a cool, dry, dark place. If the containers are opened and some of the contents removed, losses of B vitamins may set in after sufficient atmospheric moisture has been absorbed. The amount of air space above the contents may then become important. In liquid multi-vitamin products vitamin B_1 is much less stable than in dry products. In vitamin concentrates with a malt-extract basis, storage in a cool dry place is advocated to maintain the vitamin content during a reasonable shelf life (one to two years, depending on the "overages" provided). In multi-vitamin capsules, the stability of the vitamins may be affected by light as well as by exposure to high temperatures and relative humidity, and by interaction with other constituents. When precautions are taken to avoid those factors, the B vitamins in the capsules should not undergo significant loss during a reasonable shelf life.—*Chemist and Druggist.*

Comedo Formation

The various hypotheses of the mechanism of comedo formation in acne vulgaris are reviewed by E. L. Cohen (*Brit. J. Dermatol.* 68:362, 1956). It seems likely that comedones form in pilosebaceous follicles in which the hair is rudimentary. There is seborrhoea, and hormonal influences cause follicular hyperkeratosis. The pilo-sebaceous follicle being one physiological entity, the more sebum that is produced the smaller amount of keratin (i.e. hair) that is formed. Follicles with lanugo hairs usually have small pilomotor muscles.

Thus excess sebum is formed and meets a narrowed hyperkeratotic follicular ostium. The small hair cannot push its way through the ostium and, therefore, cannot act as a drain for the sebum. At the same time, the pilomotor muscles are too small and weak to help propel the sebum to the surface.

The sebum may be abnormal physically or chemically. If it be too viscid, obstruction will be assisted. A changed chemical composition might stimulate the overgrowth of horn at the ostium.

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Skin Research

Vitiligo Treatment

The Arabs have used a powder made from the fruit of the plant Ammi majus Linn. for the treatment of vitiligo for hundreds of years. Three psoralen derivatives — 8 - methoxypsoralen, 5 - methoxypsoralen, and 8-isoamyleneoxypsoralen—have been isolated from the Ammi majus Linn. fruit; and these compounds have been used orally and locally, separately and in various combinations in the treatment of vitiligo since 1947. This report by J. A. Elliott (*South. Med. J.* 49:691, 1956) describes observations on 22 patients who had had vitiligo for from one month to 25 years. Treatment consisted of (1) oral administration of 10 mg. of 8-methoxypsoralen three times a day after meals; (2) exposure of the depigmented areas to subshine at noon each day, increasing the time of exposure as tolerated; and (3) avoidance of foods with a high vitamin C content. During the summer of 1955, 20 mg. of 8-methoxypsoralen was given once a day two hours before exposure to sunshine; otherwise, the treatment was the same as during the previous summer.

Eighteen patients showed significant degrees of repigmentation. The amount of repigmentation seemed to be more dependent on the total time of exposure to sunshine and the location of the lesion than on the age of the patient, the duration of the disease, or the extent of involvement. Four patients did not show significant repigmentation, evidently because they did not cooperate adequately. Liver function tests in two patients were significantly abnormal after a period of treatment, forbidding further oral administration of 8-methoxypsoralen.

Chloroquine Hair Bleach

Bleached hair appears to be one of the side effects of treatment with chloroquine. Widely used in skin diseases—particularly for the treatment of chronic discoid lupus erythematosus—chloroquine has been recorded as considerably lightening the hair of many patients, especially blonds.

Fortunately, many of the bleached patients seem to be highly satisfied with their new appearance. The attitude of one 30-year-old lady who was being treated with chloroquine for rheumatoid arthritis was changed from bitter resentment to cheerfulness and optimism, according to Dr. H. Fuld, in a letter to the *British Medical Journal*. Her hair had been universally bleached, including the eyebrows, and she considered it to be a great improvement. Another woman, "a dark blonde," was converted into a very fair one within five months of commencing chloroquine. She was so pleased with her apparent rejuvenation that she was disappointed when the drug was cut down.

However, not everybody likes the albino type of depigmented hair, and this side effect of chloroquine should be borne in mind. Is it possible or desirable, we wonder, to produce a harmless drug which would produce systematically the effects of the conventional hair bleach?—*Manuf Chem.* 27:397, 1956.

Contact Sensitivity

This paper by F. C. Combes and G. E. Morris (*Ind. Med.* 25:289, 1956) emphasizes the limited exposure that induces in some patients a recurrence of an eruption due to allergens to which they have been previously sensitized. The first of the patients had been employed by a manufacturer of antibiotics for nine months when a dermatitis of her hands, wrists, forearms, and face, for which she was hospitalized, developed. Subsequently she experienced recurrences of urticaria or dermatitis when she only shared a room with a patient who received an injection of penicillin or when she used the same toilet as a person who had recently had an injection of penicillin. She could not even walk past the plant manufacturing antibiotics where she had formerly worked without having a recurrence of urticaria. A second patient, who had also become sensitized to penicillin while working in the production of antibiotics, experienced a recurrence of conjunctivitis and periorbital dermatitis after working next to a girl who was sucking a penicillin lozenge.

Another case of extreme sensitivity concerned a man in whom a contact dermatitis had developed after working with naphtha; later the eruption recurred merely from entering a building where solvent fumes were present. Another man, who had become sensitized to phenol formaldehyde resins, had a recurrence of a vesiculoerythematous eruption after he talked to his coworkers, who had the fumes on their clothing. In a boy with a history of atopic dermatitis, the odor of lobster caused swelling of eyes and face.

Menstrual Cycle

A clinical and experimental study was conducted by F. Kalz and A. Scott (*A.M.A. Arch. Dermatol.* 74:493, 1956) on a group of 60 patients. Fifty of these were premenopausal females suffering from premenstrual tension and exacerbations of their dermatoses. Forty of the patients suffered from acne vulgaris, ten from miscellaneous dermatoses.

In the premenopausal female, a regularly recurring pattern was observed which paralleled the phases of the ovulatory cycle. Exacerbation of the dermatoses and increase in emotional tension occurred premenstrually. An increase in sebaceous gland activity was demonstrated only on about 50 per cent of the patients.

The influence of two drugs on the cyclic change was studied. The use of both drugs effectively prevented the flare of acne vulgaris and other dermatoses and controlled the premenstrual tension in the majority of cases.

Fluid retention appears to play a

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significant role in the premenstrual exacerbations of acne vulgaris and other dermatoses, as well as in the premenstrual tension syndrome. However, it is also apparent that other factors, perhaps of emotional nature, are also concerned in the pathogenesis of premenstrual exacerbations of dermatoses.

Phenylsalicylamide Fungicide

Successful control of cutaneous dermatophytosis usually requires the judicious use of fungicidal agents. Several effective compounds came into use as a result of extensive investigation conducted by the Armed Services. The best of these proved to be undecylenic acid. Unfortunately neither the newer agents nor various combinations of old and recent remedies are effective in all or even in a majority of patients with fungus infections of the skin. Furthermore some of these agents induce sensitivity reactions which complicate treatment. For these reasons a further study of fungicidal agents has been undertaken. The purpose of this study by F. Keddie, G. F. Hexter and A. S. Brown (*A.M.A. Arch. Dermatol.* 74: 504, 1956) is to report the clinical results obtained in the treatment of a group of 159 patients treated with a new fungicide.

The compound under study is N-n-butyl-3-phenylsalicylamide (Bynamid).

Hok and associates indicated that Bynamid might be useful as a topical agent in the treatment of the common superficial fungus infections of the skin of man caused by the dermatophytes.

Bynamid was used in four forms: five and 15 per cent tincture; five per cent ointment in a Carbowax base; five per cent lotion in a polyethylene glycol base; five per cent powder. The formula for each of the preparations was as follows:

Tincture

	Per Cent w/v
Bynamid	5.0
Aerosol OT 100 Per Cent	0.1
D and C orange 4	0.025
Propylene glycol USP	10.000
Acetone NF	17.000
Isopropyl alcohol NF	67.875

Five Per Cent Ointment

	Per Cent w/w
Bynamid	5.000
Polyethylene glycol 4000	31.000
Polyethylene glycol 400	63.797
D and C red 8 Na Lake	0.003
Titanium dioxide	0.100
Aerosol OT 100 Per Cent	0.100

Five Per Cent Lotion

	Per Cent w/v
Bynamid, micronized	5.00
D and C orange 5	0.05
Golden glow orange E-7205	0.03
Na C MC	0.70
Aerosol OT 100 Per Cent	0.10
Zinc oxide	16.00
Polyethylene glycol 6000	2.40
Propylene glycol	5.00
Titanium dioxide	1.00
Water qs.	

Five Per Cent Powder

	Per Cent w/w
Bynamid	5.0
D and C orange 4	0.03
Ext. D and C yellow 1	0.0125
Zinc stearate USP	10.0
Talc USP	84.9575

The tincture proved to be the medication of choice because of its superior penetrability. The ointment was used where the skin was dry, and the powder was used on intertriginous areas. Frequently all three forms of the drug were prescribed in order to obtain regularity in use and a maximal therapeutic result.

The clinical material studied consisted of 222 infected sites, from which fungi could be identified by culture or smear. Forty-seven per cent of infections involving the trunk, arms, legs, and crural areas were cleared. Twenty-one per cent of infections of the hands, feet, and nails were cleared. Thirty-two per cent of 222 lesions disappeared; forty-five per cent were improved, and twenty-three per cent were not benefited coincidentally with Bynamid treatment. A low incidence of irritation was observed in this series of 159 patients. These studies have demonstrated that this compound may be a therapeutic agent of value in the treatment of cutaneous fungus infections in man.

Sebaceous Secretion

Determinations were made by J. E. Kirk and M. Chieffi (*J. Invest. Dermatol.* 27:15, 1956) in 10 elderly subjects of the 20-minute rate of sebaceous secretion in the central region of the forehead. The experiments were conducted over a period of seven hours and revealed an initial lipid secretion of 31 micrograms/cm.^{2}/20 min., which decreased to 20 micrograms/cm.^{2}/20 min. after six hours.

In agreement with previous observations on elderly persons the sebaceous secretion was found to be lower in the women (average, 11 micrograms/cm.^{2}/20 min.) than in the men (average, 27 micrograms/cm.^{2}/20 min.).

Prednisolone Ointment

Forty patients with various skin diseases were treated by C. C. Smith (*A.M.A. Arch. Dermatol.* 74:414, 1956) with 0.5 per cent and 0.25 per cent prednisolone ointment. A control study with one per cent hydrocortisone ointment was done, using the method of simultaneous symmetrical paired comparison. Prednisolone ointment was less effective than hydrocortisone ointment in 23, equally effective in 13, and more effective in four of 40 patients with a variety of skin diseases included in the study.

The results of this limited study indicate that although prednisolone ointment 0.5 per cent is of value in a similar group of skin diseases, it is less effective than one per cent hydrocortisone ointment.

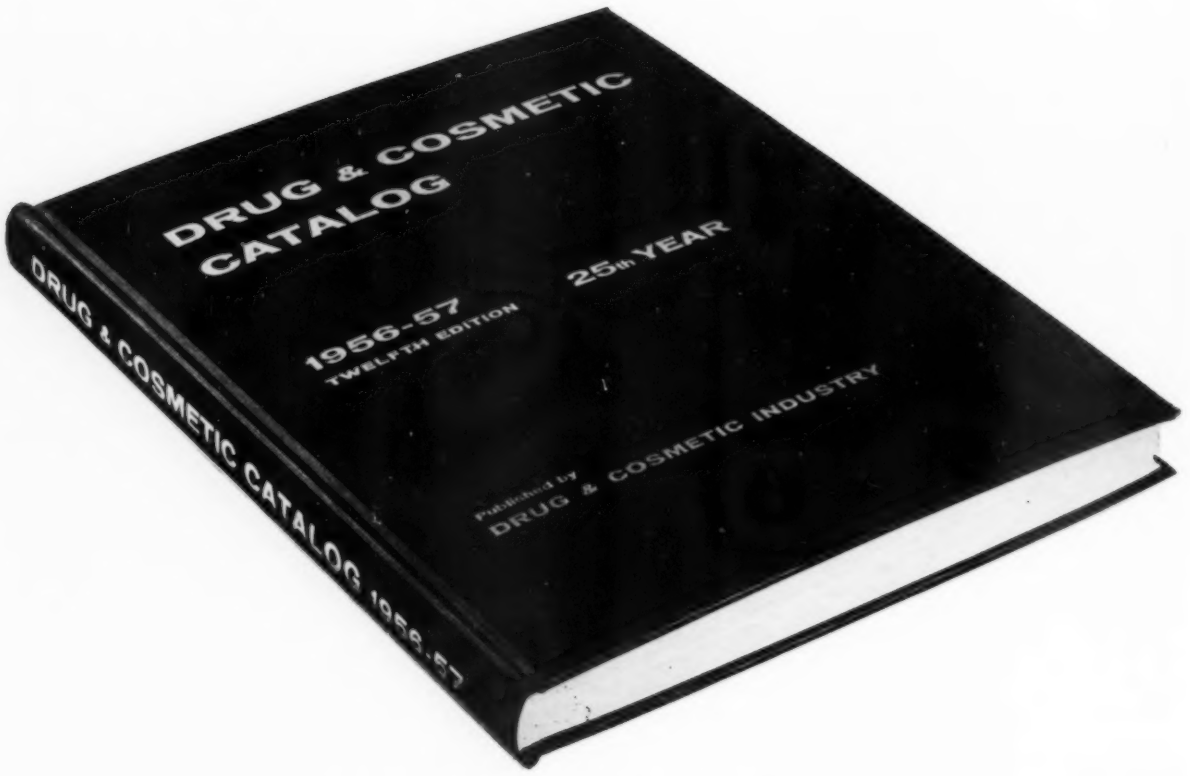
Neo-Magnacort Ointment (Pfizer) is a topical ointment containing 0.5 per cent of hydrocortisone diethylaminoacetate hydrochloride and 0.5 per cent neomycin. The new hydrocortisone compound is 500 times more soluble in water than hydrocortisone itself and less soluble in the underlying fatty tissues so that faster absorption into the skin and reduced dispersion into subdermal tissue are claimed. The preparation is available in ½ oz. and 1/6 oz. tubes.

Tryptar Ointment (Armour), intended to promote healing in abscesses, skin ulcers and infected wounds and burns, contains trypsin, chymotrypsin, polymyxin and bacitracin in a specially prepared water-miscible base. It is supplied in tubes containing one-half ounce, in cartons of 12 tubes.

Intracel (Vitamin Corp. America) is a proprietary liquid topical analgesic containing benzocaine, salicylamide and isopropyl alcohol in a lotion; claims are made for penetration of the active ingredients through the skin. The preparation is available over the counter in bottles containing 2 fl. oz.

Selsun Cream (Abbott) is a replacement for Selsun Jelly for the treatment of seborrheic dermatitis on limited areas. It is a 0.5 per cent suspension of selenium sulfide in a water-miscible base and is available in ¼ ounce tubes.

Panafil Ointment (Rystan Co.), for the enzymatic debridement of wounds, contains 10 per cent of papain powder, 10 per cent of urea and 0.5 per cent of water-soluble chlorophyll derivatives in a hydrophilic ointment base. It is packaged in one ounce and four ounce tubes.



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Tagetes Patula Oil

Tagetes patula according to S. N. and D. R. Dhingra (*P.E.O.R.* 47:391, 1956) belongs to the family Compositeae and is known in Hindi as Jafri Genda and African Marigold in English. This genus has other species *viz. T. erecta, T. lucidata, T. arborea, T. signata, T. glandulifera, T. anisata, T. pumila, T. minuta* etc. The Mexican Marigold or *T. minuta* and *T. glandulifera* grow wild and freely and are generally seen on road-sides in those countries.

In India two species, *T. erecta* and *T. patula* are grown in gardens for decorative purposes owing to their bright color.

All parts of the plant contain essential oil of strong pronounced odor which can be easily obtained by steam distillation.

Except for physico-chemical constants, no work has so far been done on the essential oil obtained from *Tagetes patula.*

The oil was obtained by absorbing the steam distillate in benzene, which afterwards was removed by distillation and the last traces under slight vacuum. The oils thus obtained in all cases possess the typical pungent odor of the plant and are generally amber red in color. Each oil was then examined for its physico-chemical constants, and then fractionated for separation and identification of its components.

The first two or three fractions in all the three cases invariably contained the terpenic hydrocarbons, which were mixed again, refractionated at ordinary pressure or under vacuum for the separation of the constituents. All the other fractions were found to be contaminated with the ketone which forms the main bulk of the oil. The oil appears to contain only one type of ketone, which is evident from the fact that ketone either obtained from the earlier fractions or from the latter fractions of the oil has the same constants and is similar in chemical nature.

The oils in all the three cases have been found to contain the same components, *e.g.* tagetone, ocimene, limonene, linalool and linalyl acetate, though in varying amounts. It was also noted in these oils that even when fractionated at 2-3 mm. pressure, the residue always amounts to 20-30 per cent of the oil which may be mostly due to the resinification of the ketone present in the oil.

Animal Deodorizing

Rhodia, Inc., New York, has published a booklet titled "Odor Control for Animal Experimental Laboratories by Use of Alamask." The booklet describes the successful development of Alamask chemicals and methods of application to eliminate objectionable odors from such laboratories.

The obnoxious odors are primarily traceable to animals, including rats, mice, guinea pigs, dogs, cats and monkeys. Rhodia's method is inexpensive, requires almost no capital investment, and provides the maximum in masking objectionable malodors.

Flavor Solvents

Alcohol will dissolve all of the volatile aromatic flavor ingredients in sufficient quantity to enable concentrated flavors to be prepared. Esters, aldehydes, ketones, organic acids and most terpenes are soluble in alcohol. Only the relatively flavorless waxes and old, polymerized oils are insoluble in alcohol and this is often a blessing rather than a handicap. Propylene glycol is not as strong a solvent for most aromatic chemicals and essential oils as is alcohol. It has practically no solvent power for essential oils with high terpene content, such as orange or lemon oil, or for oleoresins. It usually requires two to three times as much propylene glycol as alcohol to dissolve a given amount of a flavomatic.

The solvent power of glycerin is of the same order as that of propylene glycol or 70 per cent alcohol. Vegetable oils are good solvents for essential oils, liquid esters, aldehydes and ketones. Propylene glycol, glycerin and vegetable oils generally require heating to obtain solution of vanillin, heliotropin and maltol because the high viscosity of the solvent prevents wetting of the crystals. The situation often arises whereby a solution is formed which is supersaturated at storage or shipping temperatures, resulting eventually in crystallization and a corresponding imbalance of flavor. Vegetable oils differ from alcohol, glycerin and propylene glycol in that they are insoluble in water or products containing water. Natural gums are used as emulsifying agents in producing emulsions with water as the continuous phase.

Alcohol, glycerin and propylene glycol exert a preservative action. In the absence of either of the other solvents mentioned, alcohol is an effective preservative at concentrations of 14 per cent by volume and higher concentrations. Propylene glycol and glycerin are effective preservatives at 20 per cent concentrations by volume. Since the gums are plant products, their solutions or gels must be preserved against fermentation and mold growths.—*Giraudan Flavorist.*

Eupatol and Eupatene

A new liquid sesquiterpene alcohol named eupatol by S. N. Dhingra et al (*P.E.O.R.* 47:312, 1956) has been isolated by systematic fractionation of the appropriate fractions of the essential oil obtained by steam distillation of the common hedge plant *Eupatorium odoratum.* Analysis of the material indicated the molecular formula $C_{15}H_{24}O$. Oxidation with perbenzoic acid showed the presence of two double bonds; the material, therefore, should be bicyclic in structure. In the U.V. region eupatol showed strong specific absorption for a

diene system. The two double bonds in this compound are, therefore, in conjugation. On dehydrogenation with selenium eupatol gave eudalene, characterized as its picrate, which after repeated crystalization showed a steady melting point 90-91° C. Though for want of pure eudalene picrate a mixed melting point could not be determined, the color, texture and other general behavior showed clearly that it was eudalene picrate. Eupatol, therefore, is one of those limited number of alcohols which belong to the eudalene-group.

Two new sesquiterpene hydrocarbons have been isolated from the oils obtained by steam distillation of the common hedge plant *Eupatorium Odoratum* collected at different times of the year. These two hydrocarbons after extensive purification and careful scrutiny were found to be the *d* and *l* forms of the same sesquiterpene "*eupatene*." The structural identity of these two compounds was revealed by their reactions and also by comparing their infra-red curves which were identical and superimpossible. As a result of systematic investigation it has been possible to assign tentative structures to these compounds. Because of the availability of these hydrocarbons in only limited quantities, their derivatives and degradation products could not be, sometimes, characterized properly though conventional procedure and decision had to be taken on carefully chosen diagnostic tests.

Khusol

In this communication, chemical characterization of a new, solid, sesquiterpene alcohol isolated from vetiver oil is described. S. N. Dhingra et al (*P.E.O.R.* 47:350, 1956) name this compound "khusol," indicating its relation to "Khus oil," which is the common name for vetiver oil in India.

Khusol appeared in the tail fractions of vetiver oil during the steam distillation of vetiver roots obtained from Math area (Mathura District, U.P., India). Those fractions of the oil which showed signs of solidification were collected separately. The solid material obtained initially by cooling and filtration was purified by crystallization from petroleum ether, when it was obtained as a highly crystalline glistening solid, m.p. 101:2° C. Usually two crystallizations were more than sufficient to get khusol in an analytically pure state, the melting point of which did not change on further crystallization or after extensive chromatography over alumina, thus assuring that khusol was composed of one component only. The yield of the material thus obtained was 0.127 per cent on the basis of the total oil. Further amount could be obtained by fractional distillation of the residual oil, followed by filtration and crystallization.

Oil of Rose

Although insufficient work has been done on this essential oil according to S. Sabetay (*S.P.C.* 29:1117, 1956), it may be said that the distilled essential oil consists of the following elements: citronellol, rhodinol, geraniol, nerol, linalol, phenylethyl alcohol, farnesol, esters—probably geranyl acetate—fatty aldehydes (nonyl and homologs), citral, eugenol, methyl eugenol, carvone, azulenogenic sesquiterpenes and stearoptenes.

The most valuable part of Bulgarian oil of roses is the first fraction; in this fraction it might still be possible to find some new elements that are not yet identified. Perfumes prepared with the first fraction (about 20 per cent) of Bulgarian oil of roses yield startling effects, but the price of this rose is extremely high.

Indian Valerian Oil

Condensate waters from the rhizomes and roots of *Valeriana wallichii*, DC. from Kotgarh (Himachal Pradesh) were found by B. C. Gulati and Sadgopal (*S.P.C.* 29:1129, 1956) to contain isovaleric acid; *d*-methyl ethyl acetic acid; *n*-caproic acid; traces of formic, acetic, propionic and *n*-butyric acids and formaldehyde. The essential oil was dextro-rotatory.

Condensate waters from the rhizomes and roots from Chamba (Himachal Pradesh) contained iso - valeric and *l*-methyl ethyl acetic acids; formic, acetic and isobutyric acids. The essential oil was levo-rotatory.

The principle of circular paper chromatographic technique has been suitably adapted for the identification of the acids.

Levo-valerian oil from *Valeriana wallichii*, DC, on fractionation gave acids (1.23 per cent) which consist of isovaleric acid (major portion) and *d*-methyl ethyl acetic acid. Carbonyl compounds (1.71 per cent), among which isovaleraldehyde was identified, were isolated from low-boiling fractions. Terpenes were present in traces only (0.4 per cent). Fifty-five to 60 per cent of the oil is composed of sesquiterpenes, calculating on the fractionation data. These sesquiterpenes contain a new tricyclic sesquiterpene (nine per cent) tentatively named as valerianene. The oil contains nearly 27 per cent of alcohols which are high boiling and predominantly tertiary in nature. A primary sesquiterpene alcohol (0.4 per cent) having a very fine smell; a tertiary sesquiterpene alcohol (0.1 per cent) and γ-cadinol (?) in traces were isolated through phthalate treatment. Highest boiling fractions contained small quantities of stearic acid and carbonyl compounds.

Zdravetz Oil

Zdravetz is a low-growing, hardy herbaceous plant with a pleasant and characteristic odor. It reaches a height of 30 to 40 cm., thriving both in damp, shady, stony locations and on sunny, rocky soils.

The importance of Zdravetz is determined chiefly by its qualities as an essential oil yielding plant. As with the water distillation of Zdravetz, so with its extraction by means of volatile solvents, chiefly petroleum ether, products of valuable and original qualities are obtained; these products are of considerable interest as raw materials in perfumery.

Gildemeister has described the physico-chemical constants of four samples of Zdravetz Oil; Naves has given the physico-chemical constants of three samples of Zdravetz Oil and two samples of Zdravetz concrete. D. Ivanov, Il. Ognianov and N. Nicolov have published the physico-chemical constants of Zdravetz Oil obtained in 1949.

According to Naves, Zdravetz Oils occupy a very important place among the essential oils because they contain quite a considerable percentage of germacrol. According to the same author, their employment in perfumery makes it possible to obtain new effects of great value.

According to other authors, Zdravetz introduces a new note into the vegetable perfume series, as it possesses a strong note of freshness. Its aroma agrees very favorably with the tones of amber and rose. These qualities, combined with its permanence, allows Zdravetz Oil to be used in the most delicate perfumes, in which a fresh note as well as an amber tonality are looked for.

In recent years Zdravetz Oil production has made headway because of the interest shown in it.—N. Nikolov, *S.P.C.*

Industry's Books...

Handbook of Chemistry, *Compiled and Edited by Norbert Adolph Lange, Ph.D., Registered Professional Engineer, Assisted by Gordon M. Forker, B.S., Chemical Engineer, Ninth Ed., 1985 pp., Handbook Publishers, Inc., Sandusky, Ohio, (1956), Fabricoid,* **$8.50.**

This is a reference volume for all requiring ready access to chemical and physical data used in laboratory work and manufacturing. As with previous editions the publishers and the compiler have placed emphasis on a thorough revision of all tables carried over from the previous edition rather than the mere addition of new subject matter. The following Abridged Table of Contents will give a general overall idea of the vast scope of this work: Elements: Inorganic Compounds—2600 different compounds; Organic Compounds—more than 6500 different compounds; Analytical Chemistry; Physical Chemistry; Industrial Chemistry; Tables; Index—more than 3000 entries. This fact finding book should prove of special value to Chemists, Engineers, Mineralogists, Patent Attorneys, Physicists, Pharmacists, Dietitians, and Manufacturers.

Pharmacognosy, The Study of Natural Drug Substances and Certain Allied Products, *by Robertson Pratt, Ph.D., University of California, and Heber W. Youngken, Jr., Ph.D., University of Washington, Second Ed., 694 pp., Illus., J. B. Lippincott Co., Phila., (1956), cloth,* **$10.**

This book, like its predecessor, is concerned primarily with principles and their application in phases of pharmacognosy that are important for the practicing pharmacist. In keeping with the growing interest of pharmacognosists in the biochemical and the experimental aspects of pharmacognosy, in contrast with its purely descriptive aspects, a new chapter on "Biosynthesis as the Origin of Drugs" has been prepared. This chapter will help provide the student with a sound basis for understanding some of the principles involved in industrial production and practical uses of the natural products. The section on antibiotics has been extensively revised and enlarged, as have been the sections on hormones and on pesticides. There has also been included an appendix dealing with poisonous plants and the antidotal materials that the pharmacist often is called upon to dispense.

Advances in Enzymology, Volume 17, *edited by F. F. Nord, Fordham University, 556 pages, Interscience Publishers, Inc., New York (1956), cloth,* **$11.**

This, the seventeenth in the annual series, consists as usual of a series of monographs covering important advances in the various fields of enzymology and biochemistry during the past year. Monographs are written by experts in the respective subjects and present up-to-date information in a manner impossible for standard textbooks and reference works. Subjects covered include enzyme kinetics, phosphorylation and phosphate transfer, glycosylation, metalloflavoproteins, xanthine oxidase, cytochromes, chemical genetics, and ribonucleic acids and virus multiplication. In all cases, factual data and theories are presented from the newest frontiers of knowledge.

Chemical Process Economics in Practice *Edited by J. James Hur, The Atlantic Refining Co., 115 pp., pocket size, Reinhold Publishing Corp., New York, (1956), cloth,* **$3.95.**

Nine recognized experts in the economics of chemical process industries discuss: accounting terms, meanings and practices in industry; factors comprising total initial capital required for a process unit and some pitfalls of cost accounting; indirect investment and costs of services attending a processing plant; methods used to distribute indirect process costs; the relationship of price to value; consolidation of various factors into a concise, interpretive profit picture; and methods of financing the original cost an operation of a new plant.

Textbook of Organic Medicinal and Pharmaceutical Chemistry, *Edited by Charles O. Wilson, Ph.D., University of Texas, and Ole Gisvold, Ph.D., University of Minnesota, Third Ed., 323 pp., J. B. Lippincott Co., Phila., (1956), cloth,* **$10.**

The purpose of this book is to describe, within certain chemical and pharmacologic classification, those substances used as pharmaceutic aids and as therapeutic agents. The information assembled is that which is thought to be of practical knowledge of what a drug is, its limitations, applications, forms and uses, as well as of those characteristics which pertain strictly to its compounding.

Research on the Science and Technology of Food Preservation by Ionizing Radiations, *by R. S. Hannan, PhD., 192 pp., Chemical Publishing Co., Inc., (1956), First American Ed., cloth,* **$4.50.**

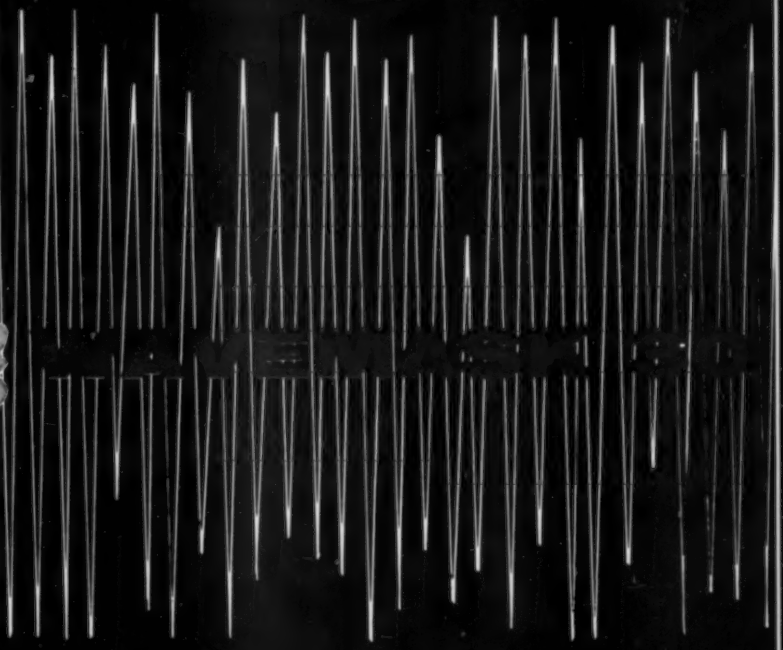
The principal topics discussed in this book are: the main properties of ionizing radiations, the use of electrically-operated generators, the use of waste radiation from atomic energy projects, protection of operators and other personnel, definition and measurement of dose, effects of ionizing radiations on microorganisms, effects of irradiation on important constituents of foods, sterilization of animal products, sterilization of vegetables and fruits, sterilization of miscellaneous products, incomplete sterilization and other low-dose procedures, and general aspects.

Gathercoal and Wirth Pharmacognosy, *by Edward P. Claus, Ph.D., Professor of Pharmacognosy, University of Pittsburgh School of Pharmacy, Third Ed., 731 pp., Illus., Lea & Febiger, Phila., (1956), cloth,* **$12.50.**

This is an effective study of the chemical aspects of drugs, therapeutic agents and commercial products derived from the plant and animal kingdoms. Synthetic replacements for natural derivatives are also considered. Emphasis is placed on their preparation for the commercial market and on the determination of their identity and value. Chapters have been added on the antibiotics, immunizing biologicals, allergens and allergenic preparations, and pesticides. Rauwolfia, reserpine, hyaluronidase corticotropin and other drugs which have come into prominent therapeutic usages are discussed in the fullest detail.

Catalysis Vol. IV—Hydrocarbon Synthesis, Hydrogenation and Cyclization *Edited by Paul H. Emmett, The Johns Hopkins University, 570 pp., Reinhold Publishing Corp , New York, (1956), cloth,* **$12.50**

This series provides research chemists with the most soundly conceived reference source ever published on the physical chemistry of catalysis and catalytic processing. The fourth volume is of particular interest to the petroleum and coal industries. Devoted entirely to the Fischer-Tropsch synthesis, it considers such important topics as the hydrogenation of carbon monoxide and related reactions, methanation, catalytic hydrogenation of coal and tar, and catalytic cyclization and aromatization of hydrocarbons.



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Trade Literature

Vitamin Needs of the 40-Plus

Why the 40-Plus Patient Needs More Vitamins, is the title of a new booklet issued by Merck & Co., Rahway, N. J. Based on an exhibit which has drawn large crowds at medical meetings, the booklet stresses the protection vitamins give the 40-and-over individual, particularly with reference to the circulatory, nervous, digestive, hemopoietic, skeletal and endocrine systems. There are also selected abstracts from articles by nutritional and medical authorities, and a bibliography of 142 references. Major features of the exhibit, such as direct relationship which deficiency of the B vitamins has on heart disease, eye and skin disorders, nervous condition and other common ailments, are included in detail.

Compacting Presses

The complete line of Stokes industrial compacting presses, which are used for making wide variety of products, is described in a new 24-page catalog, No. 816, issued by the Tabletting Division of F. J. Stokes Corporation, 5500 Tabor Road, Philadelphia 20.

C and C Booklet

More than 335 organic chemicals are described in a new 24-page booklet issued by Carbide and Carbon Chemicals Company, 30 E. 42 Street, New York 17. Condensed data on applications are given, as well as physical properties in tabular form. This 1947 edition features twenty-one new products.

Home Health Emergencies

The Medical Department of the Equitable Life Assurance Society, 393 Seventh Avenue, New York 1, has published a 256-page illustrated pocket-size volume entitled "Home Health Emergencies," which will be sent without obligation on individual request.

Grinding, Mixing Equipment

Grinding and Mixing Equipment, Bulletin 280, has been published by the U. S. Stoneware Co., Akron 9, Ohio. In addition to giving detailed information on lines of grinding and mixing equipment, this 24-page manual incorporates a special chapter dealing with the principles of jar, ball, and pebble mixing.

Caustic Soda Handling

Hooker Electrochemical Company, Niagara Falls, N. Y., has issued Technical Service Bulletin 102 entitled Caustic Soda—Engineering and Handling Guide. This 36-page booklet, in two colors, and profuse with photographs, graph and tables, gives complete information necessary to those using caustic soda.

Sharples Solvents

A new catalog of Sharples brand synthetic organic chemicals has been issued by Pennsalt Chemicals, Dept. S, 3 Penn Center Plaza, Philadelphia 2. Listed in the 12-page brochure are 77 commercially available products with formulas, product descriptions, and suggested uses. In addition there is given detailed information on 22 semi-commercial and 17 experimental compounds, samples of which are available in limited quantities from laboratory and pilot plant production.

Suppository, Lipstick Molds

Phar - Metic Equipment, South Orange, N. J., has issued a booklet describing a line of suppository and lipstick molds which the company has available in this country.

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Readers' Questions . . .

Moisturizing Cream: *We are interested in manufacturing a lubricating - moisturizing cream and inclose the formula of our present lubricating cream. Can you suggest the addition of a humectant that will provide continuous moisturizing action to dry skin.?* SANTIAGO.

Your formula, although of the beeswax-borax type, is so proportioned that it is probably of the water-in-oil type and the addition of a humectant ingredient would have relatively little effect. If you will decrease the amount of petrolatum by five per cent and add the equivalent amount of glycerin or sorbitol solution, you should obtain an oil-in-water cream with enough added humectant to have some beneficial action.

Foot Antiperspirant: *We would like to prepare a deodorant-antiperspirant preparation to use on the feet and would appreciate suggestions from you as to a possible formula.* CHICAGO.

The following formula may be useful as a starting point:

Methenamine	1.5
Hexachlorophene	0.2
Menthol	0.02
Glycerin	10.5
Alcohol	20.4
Water	67.36

These components should readily form a clear solution, although it would be advisable to dissolve the menthol and the hexachlorophene in the alcohol ahead of time. Menthol is useful for its cooling effect, the hexachlorophene is an antibacterial antiperspirant and methenamine or hexamethylene tetramine is a very useful antiperspirant and deodorant for use on the feet. It may be responsible for skin irritation if used elsewhere on the body, but seems to be safe and effective in foot preparations.

Bubble Bath Preparation: *I would appreciate your assistance in the formulation of bubble bath preparations, both liquid and powder forms.* BERLIN.

This subject was pretty well covered in an article in the July 1956 issue of this magazine. To recapitulate, active ingredients include the high-forming surface active agents such as alkylolamides, fatty

alcohol sulfates, aralkyl sulfonates and aralkylpolyethers. These can be formulated as powders or as solutions, suitability for the latter application depending upon solubility. Both types of products should contain water softening agents, preferably sodium carbonate or sesquicarbonate to stabilize the foam.

Waterless Hand Cleaner: *Can you give me any indication as to the composition of a waterless hand cleaner, one that may be made up with water but requires no rinsing to do a decent job.* NEW ORLEANS.

Preparations of this type are usually based upon a gum that more or less absorbs the dirt and then is removed by rubbing. A representative formula consists of methyl cellulose, high viscosity, 15 per cent, five per cent of alcohol, one-half per cent of lanolin, a preservative and water. Other gums may be used in place of the methylcellulose; humectants, used in excess, may retard the "rolling" which removes dirt.

Epilating Wax: *We would like to manufacture a wax hair remover that works by pulling the hairs out. Have you any suggestions concerning formulation?* LOS ANGELES

The following is a typical formula of the type you desire. It is made by melting the ingredients together and pouring into molds. Before use, the preparation is melted at as low a temperature as possible, painted on the skin, a cloth applied to the still sticky wax and the whole yanked off after it has set.

Rosin	**50.0**
Yellow beeswax	**25.0**
Paraffin	**17.0**
Petrolatum	**8.0**

How about ordinary adhesive tape or the sticky Scotch tape?

Epinephrin Ointment: *We wish to prepare an ointment or cream containing one-tenth of one per cent of epinephrin or one of its soluble salts for topical application to relieve itching. We are concerned by the low stability of the active ingredient.* BROOKLYN.

Epinephrine salts are very quickly oxidized by air in the presence of even traces of moisture and this oxidation is especially marked when iron or copper compounds are present. However, there is surprisingly little trouble with the stability of ointments consisting wholly of hydrocarbon mixtures, such as mineral oil, paraffin and petrolatum. The epinephrine salt is mixed with the melted ointment base which must be stirred while cooling to prevent separation of the salt.

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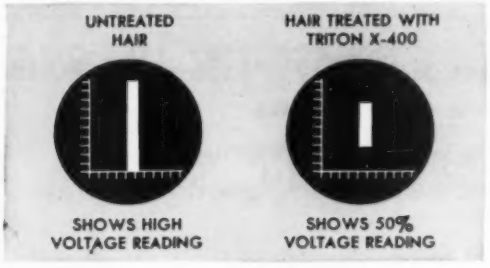

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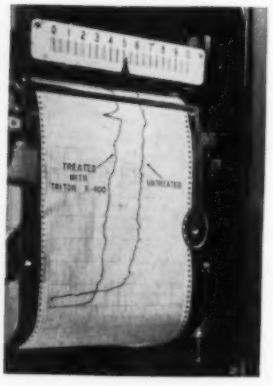

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(Continued from page 757)

tial relief on the second day of medication, the others being unchanged.

The publication by Tebrock et al gives detailed analyses of results with over 1900 subjects. These were divided among four groups who received the following preparations: 1) 250 mg. lemon bioflavonoid complex plus 50 mg. ascorbic acid; 2) 250 mg. bioflavonoid; 3) 50 mg. of ascorbic acid; 4) no additional medication. Patients in all groups received a preparation containing 325 mg. salicylamide, 195 mg. acetophenetidin, 65 mg. caffeine and 50 mg. thonzylamine hydrochloride, a modified APC formula with the addition of an antihistamine. The medications were given in a double-blind test, under carefully controlled and supervised conditions. The experimental design permitted efficient utilization of all data and the statistical analysis included tests for significance. In a number of instances, patients were given additional medication, but analysis showed that these did not appreciably affect the results of the study.

In the master tabulation, analysis was made on the basis of treatment with and without bioflavonoid, with and without ascorbic acid and subjective and objective evaluation of condition after three days—worse, no change, improved, cured. Neither bioflavonoid nor ascorbic acid showed any statistically significant effect in the treatment of the cold. Again, in considering the change in symptoms—running nose, sneezing, hoarseness, cough, malaise, headache, postnasal drip and sore throat—neither bioflavonoids nor ascorbic acid had significant effect. According to the authors, "The overwhelming impression gained from all these data is the singular lack of effect produced by either the bioflavonoid or the ascorbic acid" and "In our opinion neither of these drugs in the dosage given has any significant effect in altering the course of the common cold."

Franz and Heyl utilized 89 volunteer medical students and student nurses for a three month period in 1956. These were divided into four groups who received, respectively, capsules containing a bland placebo; capsules containing 333 mg. of bioflavonoid and 65 mg. of vitamin C; capsules containing only 65 mg. of ascorbic acid; capsules containing only 333 mg. of bioflavonoid. Three capsules were taken daily for the three month period. If a subject during this period reported cold symptoms, he was directed to take no other medication and the progress of the cold was evaluated after the fifth day after onset of symptoms. In the placebo group of 23, there were seven colds, of which three were cured in five days; 22 subjects receiving bioflavonoid plus vitamin C had six colds of which five were cured in five days; in the vitamin C treatment group of 22, there were eight colds, all of which were cured in five days; in the 22 subjects receiving only bioflavonoid, there were eight colds of which four were cured in five days. The authors concluded "within the limits of this admittedly small

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In a far-off land a merchant prince by the name of Fray Grins had received all three blessings . . . he was wealthy, healthy and wise. His sons went to the best schools, his daughters married the most eligible men, his wife had the most sparkling jewels, and he, himself, collected rare editions of esoteric books.

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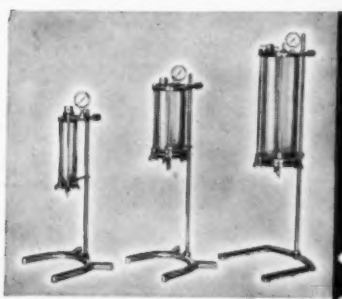

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series" that administration of bioflavonoids had no effect on the incidence or cure of colds.

Only one of these studies used an inactive placebo; dosage levels were different, as were the bioflavonoid preparations; the statistical designs and the quality of statistical analysis varied widely; comparisons of these studies tend to obscure rather than reveal the answer to the question as to whether the citrus bioflavonoids have anything more than a placebo effect in treating the common cold.

INSECTS . . . ORIENTAL FOOD AND DRUGS

(Continued from page 759)

to clarify vision and for cloudiness of the cornea.

The stinkbug, called the "nine smell insect," has an unusual reputation as a sex stimulant, and also may be prescribed for "weakness" of the kidneys, spleen for asthma. The noted "Black Dragon Pills" contain stinkbugs as the chief ingredient.

Five hundred lice ground up are supposed to relieve a splitting headache when taken internally, or may be applied locally to eat off warts. According to Dr. E. E. Read formerly of Shanghai, this ancient but "lousy" treatment is more likely to give the patient an attack of typhus.

Seven insects boiled with two eggs was the old standard treatment for Rabies (mad dog bite), in which the resulting drastic bloody urine was considered beneficial.

A Sund official dreamed that his relative, Chang Chia, was sick with dry cholera and that spiders were the only remedy. He immediately sent a messenger to inquire about his relative's health. Finding that Chang had died before the dream took place, he regarded this remedy as a supernatural revelation for the benefit of others. Spider webs applied to bleeding wounds as a styptic, survives in British slums today.

The web of the garden spider collected on the fifth day of the fifth moon and tied to the body in a bag without the wearer knowing it, was said to ward off malaria. Dioscorides, by a similar procedure, claimed to have cured malarial fever.

Locusts as Medicine

Ancient Chinese obstetrical and optical drug specialists used the cicada (17-year locust) for difficult childbirth, expulsion of the placenta, and to remove films over the eye. The presumed physiological action was based on the fact that the insect casts its skin. The toad may not cure warts, but according to Dr. Hou Chen's researches, the use of toad venom by the old Chinese for hemorrhage of the gums and for sinusitis may be justified because of the presence of adrenaline, cinobufotoxin, arginine, suberic acid and ergosterol. Its anesthetic action accounts for its use for toothache and canker sores.

Modern pharmacy still utilizes insect derivatives as medicinal agents. Chinese wax, a secretion deposited on trees in Western China by the insect, Coccus ceri-

ferus, contains ceryl cerate, which has several commercial and medicinal uses. Honey still has some pharmaceutical uses. The gall fly, gall midge, and certain lice attack plant tissues causing galls which have medicinal properties. Beeswax, cera alba or flava, is used as a base in modern ointment preparations.

Cantharides, obtained from Spanish flies, is a powerful blistering agent and has external uses in human and veterinarian practice, but is dangerous when taken internally. Cochineal from the red scale insect, is used as coloring agent in medicinal preparations. Formic acid, now synthesized but originally obtained from the ant, is used particularly in foreign countries, as a caustic, astringent, and counterirritant.

"Go to the ant thou sluggard" and eat him if hungry.

ARABIC KARAYA AND TRAGACANTH GUMS

(Continued from page 763)

of stabilizing emulsions, and of forming films upon evaporation. In solution, however, each of the individual gums exhibit its own type of behavior.

GUM ARABIC—The usefulness of this hydrocolloid in the drug and cosmetic industries is due to several of its interesting physical properties:

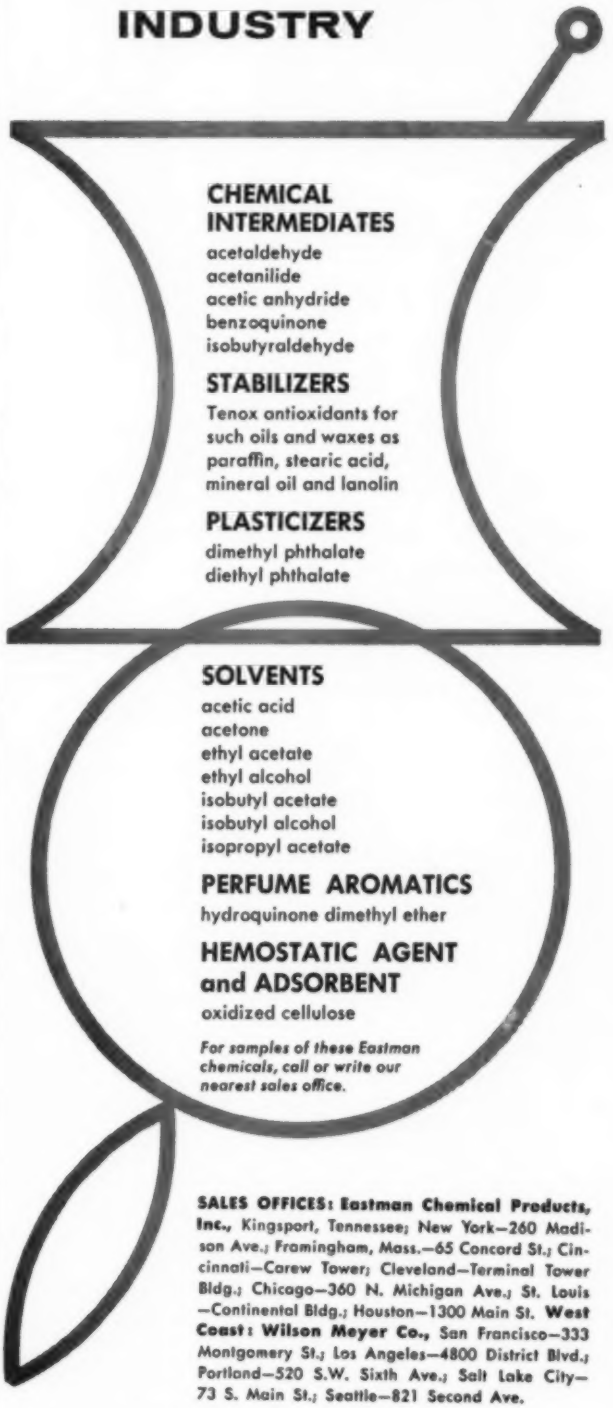
A. It is an excellent protective colloid.
B. Its aqueous solution is a good emulsifying medium.
C. It is nearly completely water-soluble.
D. It has binding and adhesive ability.
E. Its aqueous solution has demulcent and emollient properties.
F. Its solution is viscous.

Gum Arabic, due to its protective colloid nature, has been used for many years in the production of vitamin-fortified fish oil emulsions (i.e., cod liver oil). Used in conjunction with Gum Tragacanth, stable emulsions with excellent shelf-life may be produced. Gum Arabic retains its viscosity and stabilizing properties over a wide range of pH values, making possible its use in a wide variety of systems. An advantage in using Gum Arabic or any of the other natural water-soluble gums in preparations which are taken orally is their acceptance for food and pharmaceutical use by the Federal Food & Drug Administration. There exist extremely few emulsifiers and emulsion stabilizers which fall into this classification. Gum Arabic is widely used, for example, in flavoring oil emulsions.

Gum Arabic finds use as an adhesive to maintain the shape and form of therapeutic tablets. Upon reaching the fluids of the stomach, the gum swells and the tablet is quickly disintegrated. Also, many types of coatings for various pills employ Gum Arabic in their manufacture.

In cough drops and cough syrups, Gum Arabic acts as an emollient and demulcent; and in the case of syrups, produces a smooth viscous body. In addition it prevents the crystallization of sugar in both of

FOR THE DRUG AND COSMETIC INDUSTRY



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these products. One of the newer uses of Gum Arabic has been in the preparation of diabetic foods. Several of the cake, confectionery and jelly products utilize its bodying properties.

In cosmetics, Gum Arabic finds application in a wide variety of products. Used in lotions and protective creams, it stabilizes the emulsion, increases the viscosity, assists in the spreading properties, adds a smooth feel to the skin, and forms a protective coating. In the formulation of cosmetic compact cakes, it is employed as a binding agent. The typical cake is composed chiefly of a color vehicle, mineral oil and an aqueous solution of Gum Arabic. It is also used in the preparation of facial masks and cake rouges. Another of its uses is in perfume oil emulsions.

GUM TRAGACANTH—This hydrocolloid finds application in a great many pharmaceutical and cosmetic products. Among its many useful physical properties is its ability to create extremely viscous solutions with water; its demulcent and emollient properties; its suspending and stabilizing action; and its film-forming abilities.

Due to its thickening, stabilizing and dispersing action, Gum Tragacanth finds use in a wide variety of ointment bases. A typical formulation for an ointment base suitable for absorption is a modification of one from the British Pharmaceutical Codex. The following base, suitable for absorption, is reported by Mantell:

Gum Tragacanth Powder	2.5 parts
Glycerol	20.0 parts
Water	100 parts
Oleic Acid	30.0 parts

Gum Tragacanth is used in the preparation of greaseless ointment vases for burn, salicylic acid, and sulfur salves. A typical product utilizing Gum Tragacanth for this purpose is Unna's Jelly. The advantage of using Gum Tragacanth is the complete water washability of the final product. A fine protective film is formed which aids in the healing of the skin.

This gum is also widely used for its lubricating and emollient properties in the preparation of gynecological and lubricating jellies. Its water solubility makes its washability from the skin superior to greasy-type bases.

Gum Tragacanth shows excellent results in ointment base preparation for Penicillin and in the preparation of Sulfonamide Suspensions for oral administration. A very high absorption of Calcium and Sodium Penicillin from Tragacanth-gel bases was found.

In pills, Gum Tragacanth finds use as a disintegrating agent and is included in excipients to bind pill masses. Its demulcent property is utilized in medicinal troches for soothing irritated throat membranes and in skin lotions.

Gum Tragacanth's emulsion-stabilizing properties are used in preparing medicinal oil and paraffin oil emulsions.

(Continued on page 849)

(Continued from page 846)

In toothpastes, Gum Tragacanth finds use as a binder and shows excellent shelf-life in the tube. It has been used in several types of toothpaste products and a long list of patents is available. In tooth powders, it serves as a foam stabilizer.

Gum Tragacanth is used as a thickener, emollient and film former in hair tonics, wave lotions, and hand balms.

GUM KARAYA—This water soluble gum has several interesting properties which can be utilized in many pharmaceutical and cosmetic products. Gum Karaya particles do not form a true solution; but, rather, imbibe large amounts of water and swell up, producing a homogeneous mass with the water. A viscous body is imparted to the solution and small percentages are very effective in this respect. By grinding Gum Karaya to a very fine-mesh powder, smooth uniform solutions can be produced.

Gum Karaya's swelling properties are utilized in bulk laxative preparations. A coarse grind of the gum is used for this purpose so that a discontinuous mucilage is produced, which is a very effective laxative. The Karaya particles swell in water to about 75 to 100 times their original volume.

In denture powders, Gum Karaya is used extensively as a binder. In the usual formulation, it is combined with a mild alkali and a flavoring agent. When sifted on the denture plate, excellent adhesion is attained between the plate and the mouth.

Due to its ability to form a film upon evaporation, Gum Karaya is used in various types of wave sets, hair tonics, and permanent-waving compositions. This film may be plasticized by the addition of other compounds to the preparation. Gum Karaya also serves as a binder in makeup cake powders, and as a thickener in lotions and balms.

In summation, the general properties of the natural water-soluble gums which point up their usefulness in cosmetic and pharmaceutical products are:

(*a*) Their ability to thicken water solutions.
(*b*) The demulcent or emollient properties of their solutions.
(*c*) Their suspending action in solution.
(*d*) Their ability to stabilize emulsions.
(*e*) Their film-forming properties.
(*f*) Their adhesive and binding qualities.
(*g*) Their compatability with a wide variety of materials.
(*h*) Their non-toxicity.

DEVELOPMENT, EVALUATION AND MARKETING OF SHAMPOOS

(Continued from page 769)

hair fragrant, soft, lustrous and manageable."

A study of the problem of shampoo evaluation clearly indicates that a great many factors affect its performance. It is equally true that a great many

KEY MOVE

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factors determine the customer acceptance or preference for a product. Recent studies and researches have helped to clarify and classify these factors but the clear evaluation of a shampoo and why it is successful is far from solved. Today at least the evidence indicates that a good shampoo should:

(1) foam in hard or soft water;
(2) foam in the presence of natural hair oils or hair dressings;
(3) leave the hair fragrant, soft, lustrous and easy to comb and manage;
(4) have some cleansing action and rinse out easily.

Marketing

It is clear from the development and evaluation problems that marketing must play an extremely important role in the sale and growth of a shampoo. While there are more than 100 shampoos on the market, it is certainly true that 10 per cent of them have 80 per cent of the total shampoo market. When synthetic detergents replaced a "cake of soap" they contributed a cosmetic value to soaps and detergents.

In evaluating shampoos on the basis of consumer acceptance a user should be contacted on three occasions: first, immediately after the shampoo; second, two to three days later; and third, two to three weeks later. All too frequently an opinion changes as the longer-range effects can be observed. A recent survey clearly showed that fragrance is extremely important in product selection. When the fragrance of a poor shampoo was improved in a consumer panel test the shampoo went from last place to first, even though all other properties remained the same. In this type panel testing the *same* shampoo with improved fragrance is reported as rinsing better, lathering better and giving more luster and shine. This demonstrates a clear case where the same technical activity is reported as more effective when only the fragrance is improved.

In market testing by actual consumer use an infinite number of variables affect the answers received. Each person reacts differently depending upon their mood, degree of fatigue, reason for interest and previous experiences. Then too the type question and how they are directed will always affect the answers given. Finally, with normal variation in tastes in different age and society levels, it necessitates the sampling of several hundred and preferably several thousand people to get a small cross-section of the market. Clearly, repeated samplings of hundreds of people after actual use will gradually give a collection of data which can be statistically analyzed for significant preferences but we are finally left with the problem of determining what the consumer meant by "shinier," "cleaner," "rinsed out easier," "better appearance," "combed out easier." Certainly, wherever possible some accurate measure of a product character is needed and then an estimate of how badly the customer wants that characteristic.

In an effort to market shampoos some interesting packaging and product modifications have been tried.

The *aerosol* shampoo at this type is one of the more unsuccessful attempts to produce a new package. At least six elaborate and expansive marketing programs have been tried on aerosol packaged shampoos and without exception they have failed. Maybe a woman wants to work up her own foam on her head; maybe she doesn't get enough foam to do a good shampoo operation from the aerosol package. In any event, a similar product, the aerosol shaving cream, has been a phenomenal success.

The latest *baby* shampoos, a really new type formulation, seems to be growing and gaining markets. The latest baby shampoo has been formulated so as to avoid smarting of the eye. While some foam may have been sacrificed, the freedom from possible irritation in children's eyes has proved to have strong appeal.

The current *color* shampoos appear to be primarily shampoos with an extremely small amount of color. They appear to be gaining a portion of the market with the addition of extremely small amounts of color and possibly some "highlights."

Products claimed to shampoo a wave or curl into the hair were invariably short-lived as the claims seemed to be somewhat greater than their performance. Clearly such a product, if it performed, could expect to find a growing market.

The role of an antiseptic in a shampoo enjoys a real portion of the foreign shampoo market. In this country some claims for dandruff removal and some claims for bactericidal action have gained a small market. By far the most successful shampoo in this field is the use of an antiseptic in a shampoo to contribute a *deodorant* action. It is probable that the "cake of soap" with deodorant action has made even greater advances in sales.

In conclusion, the growth of shampoos to a 120-million-dollar annual sales is a tremendous tribute to its development, evaluation and marketing. It is a far cry from a cake of soap and it has become a cosmetic item of glamor and charm. There are still a great many problems to be solved and many, many tests to be run before we can really pre-analyze and predict the success and acceptance of a new shampoo formulation!

PACKAGING FACILITIES

(Continued from page 772)

finished packages produced and the unused bulk material was returned to the bulk storage area. Likewise, any leftover packaging supplies were returned to the warehouse and the excess labels and inserts were returned to the label department where the previously coded labels were destroyed and the inserts were returned to stock.

Several other features of this layout are:

1. Prior to 1951, our locker rooms, laundry room and coffee room were located in buildings other

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than the building in which the packaging department was contained. This caused the loss of a considerable amount of time at start up in the morning, at break periods, at quitting time and when exchanging uniforms. In the new layout, we located all of these areas near the packaging area thereby reducing this loss of time to an irreducible minimum.

2. Likewise, handling of waste paper and scrap corrugated had always been a major problem. By providing a trash storage area near the outside door, we were able to remove the debris from the packaging floor and store it where it could be picked up daily by a waste paper dealer.
3. In the pharmaceutical industry, we have had a returned goods handling problem because we will accept returns for credit provided the Sales package has not been opened by the druggist. After the packages have been inspected, it may be necessary to re-label or re-dress them prior to forwarding them to the shipping department. Since a considerable quantity of the returned goods is salable merchandise and since the quantities of packaging supplies required to re-label and re-dress are very small, we located the returned goods department adjacent to the label department.

In addition to the several features enumerated herein, probably the most important feature of the layout was that it provided for expansion of the warehouse, packaging department and detention area by merely removing the outside wall and adding to the building. In this sketch the packaging area measured 140 feet by 84 feet. In the area, we had 10 packaging lines in 140 feet with the spacing between the lines approximating 15 feet (from the center of one line to the center of the next adjacent line). From 1951 to 1955 our business expanded considerably. How did we handle the increased production demand? Fortunately, we had provided adequate space in the service areas adjacent to packaging so that these areas were not expanded during the growth period.

Sketch No. 2 shows the small amount of additional area which was added to the building during the expansion. This additional area expanded our warehousing space, provided an additional packaging materials staging area, increased the packaging area from 140 feet by 84 feet to 190 feet by 84 feet, and increased the size of the detention area. In the packaging area we increased production by increasing the speeds of several of the packaging lines from 20 containers per minute to 60 and 120 containers per minute by installing high speed filling and packaging equipment. In addition, by moving the lines somewhat closer together we added six more packaging lines, thereby increasing the number of lines from 10 to 16.

Throughout this article, I have presented a large volume of detailed information concerning the subject: Providing Packaging Facilities in the Pharmaceutical Industry. In conclusion, I am going to summarize

all of this information in a few simple recommendations as follows:

1. Build the packaging facilities around a good quality control plan.
2. Provide flexibility for handling short-run or high volume production and for handling a wide variety of different containers and packages.
3. Install a good materials handling system and materials flow plan.
4. Provide for removal of waste paper and corrugated cartons.
5. Provide a staging area for packaging supplies.
6. Buy and install high quality machinery and equipment.
7. Space the packaging lines on 20 foot centers.
8. Have the service areas located near the packaging area in order to reduce time lost in traveling to and from the packaging area.
9. Provide a detention area for storage of unreleased finished goods.
10. Provide for expansion.
11. Provide adequate equipment to air-condition the packaging area and the service areas.

THE "BAN" DEVELOPMENT STORY

(Continued from page 781)

theme for the foreseeable future to try to build a consistent brand image. One point in advertising that I believe to be most important and that is to decide who you want to reach, how you want to reach them and then stick to your guns. I'm thoroughly convinced that many excellent campaigns have gone by the board because the advertiser got tired of them before the consumer was aware of them.

The last, but undoubtedly the most important part of our media structure was a redhead by the name of Godfrey. Arthur took this product to his bosom and sold as only he can to his daytime television and radio audience and soon had them chomping at the bit to go out and buy Ban. And, they did just that.

The rest of the story has been fairly evident to those in and around the drug field. Ban has been a hot product. Our regular sales forecasts were revised upward with wonderfully satisfying regularity. More funds became available and were put to use in nighttime TV on "Four Star Playhouse" and "Alfred Hitchcock Presents." In eight months' time Ban moved to the number three spot in drug sales and Bristol-Myers into leadership in the deodorant field. Currently it is the largest selling deodorant and Bristol-Myers has shot further ahead of the pack. In past gatherings of all kinds, there have been many speeches and discussions which delved into the dilemma of automation producing products faster than the marketing operation could sell them. At the moment with Ban, the shoe is on the other foot, and

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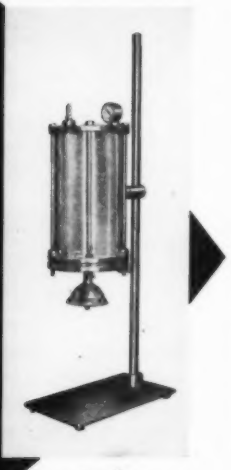

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I hope it stays that way for a while. One of these days I know I'll have to start eating my words, but frankly, it has been fun applying a small needle to our production people.

That's the brief story on Ban. It has all the earmarks of a continuing success, a product with uniqueness that really performs its function demonstrably well and has an abnormally strong repeat factor. It's been a wonderful experience to have the assignment of handling the coordination of all the various elements within the framework of our company and see how all the pieces finally dovetailed together to ultimately justify the faith that had been so strongly in evidence over the long seven year development of this product.

I believe this case history on Ban is a good example of the original premise of this talk, that the three Ps of Product, People and Planning are the basic ingredients for a successful introduction of a new product. It was a closely knit operation from start to finish and I'd be remiss if I didn't indicate I'm proud to have had a share in its success. It's been a wonderful experience to coordinate this successful introduction and have the happy combination of the right product, the right backing and the means to do an overall competitive marketing job.

Combinations of this type do not come along too often. I just hope that I'll have more like it before I ultimately hang up my flannel suit and striped tie.

RECENT PATENTS

(Continued from page 797)

2,762,802—**J. R. Geigy (Switzerland)—Optical Brightening Agents.**

2,762,803—**Chas. Pfizer—Thiamin Chloride HCl Prepn.**

2,762,804-5—**Am. Cyanamid—Alkyl-Phenyl-2, 6-Piperazinediones.**

2,762,806-9—**Sterling Drug—2, 3-Alkylenedioxy-6-Nitro-9-Aminoacridines.**

2,762,818—**G. D. Searle—4-Hydroxytestosterones.**

2,762,821—**Dr. Salsbury's Labs.—Organotin Arsonates.**

2,763,590—**Chas. Pfizer—Bacitracin Recovery.**

2,763,591—**Bristol Labs.—Tetracycline Production Using Cottonseed Endosperm Flour.**

2,763,642—**Am. Cyanamid—Puromycin.**

2,763,643—**Am. Home Products—Azacycloheptanes.**

2,763,645—**Chas. Pfizer—Amino Alcohol Esters of Etiocholene 17α-Hydroxy-3 One 17β Carboxylic Acid.**

2,763,646—**Eastman Kodak—Ketones Containing an Arylbenzothiazole Nucleus.**

2,763,647—**Am. Cyanamid—Toluic Acid Derivatives.**

2,763,650—**Ciba — 4:4' - Diaminostilbene - Disulfonic Acid-(2:2') Derivatives.**

2,763,652—**Am. Cyanamid—Piperazinediones.**
2,763,653-5—**Upjohn—Methyl Reserpate O-(β-cyclopentylpropionata, -O-acetoacetate, and -O-cathylate)**
2,763,659—**Sterling Drug — Isonicotinoylhydrazones of 5-(Oxoalkyl)-2-Thiohydantoins.**
2,763,660—**Am. Cyanamid—1, 3, 4-Oxadiazote-Sulfonamides.**
2,763,669—**G. D. Searle—Δ^4-17-Thio-Androsten-3-Ones.**
2,763,670—**Syntex (Mexico)—17α-Methyl-Androstane-17β-Ol-3-One.**
2,763,671—**Olin Mathieson—9α, 21-Dihalopregnanes.**
2,763,681-2—**Am. Cyanamid — Chlortetracycline Purification and Alkaline Earth Salts.**
2,764,518—**Rohm & Haas—Therapeutic Mixture of Carboxylic Cation Exchange Resin and its Copper Salt.**
2,764,519—**Schering — Substituted Cyclohexylamines.**
2,764,521—**U. S. A.—Prepn. of Vitamin B_{12} Concentrates.**
2,764,581—**Badische Anilin & S. F. (Germany)—Pharmaceutically Active Hexamethylene-tetramine Products.**
2,764,582-3—**Farbenfabriken Bayer (Germany)—4, 4'-Diamino Stilbenes.**
2,764,584—**Ciba—3, 6-Dioxy-Pyridazines.**
2,764,585—**Hoffmann-La Roche—Spirobarbituric Acid Compounds.**
2,764,590—**Dr. Karl Thomae (Germany)—4, 4'-Disubstituted-Diphenyl-Pyridyl Methanes.**
2,764,596—**National Drug Co.—Inorganic Acid Esters of Polyhydroxylated Flavones and Flavanones.**
2,764,613—**Mead Johnson — N - Alkyl Benzilic Amides.**
2,764,614—**Ciba—Chlorohydroxysalicylanilides.**
2,764,615—**Purdue R. F.—Alkoxyalkylamines.**
2,764,616—**G. D. Searle—Alkyl and Aralkyl Ethers of 4a-Methyl-6-Hydroxy-1, 2, 3, 4, 4a, 9, 10, 10a-Octahydro-1-Phenanthrones.**
2,765,256—**Burroughs Wellcome—Injectable Solutions of Digoxin.**
2,765,257—**J. M. Blackburn—Nail Polish Remover and Cuticle Softener.**
2,765,258—**Chas. Pfizer — 11β Oxygenation of Steroids by Trichothecium Roseum.**
2,765,299—**Armour—Recovery of Serum Albumin.**
2,765,302—**Olin Mathieson—Streptomycin Purification.**
2,765,305—**S. E. Massengill Co.—Aminoalkyl and Quat. Ammonium Alkyl Esters of o-Benzylbenzoic Acid.**
2,765,317—**S. d. U. Chimiques Rhone-Poulenc (France)—Bis(2-Aminoalkyl-Coumaran) Derivatives.**
2,765,343-4—**Eastman Kodak — Crystallizable**

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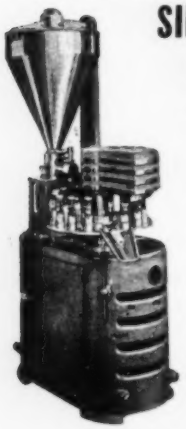

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2,766,290—Eastman Kodak—Conversion of Hydroxy Vitamin A Acetal to Vitamin A Aldehyde.

2,767,116—Bristol Labs.—1, 3-Disubstituted-2-Streptomycyl-Tetrahydroimidazole.

2,767,118—S. Gaymont — Bacterial Incubation Control.

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2,767,161—Bristol Labs.—Dehydroabietyl-Ethylenediamine.

2,767,162—G. D. Searle—Glycolyl Derivatives of 1, 12 - Dimethyl-Polyhydrophenanthrene - 1 - Carboxylic Acid Esters.

Court Case

2,732,327, W. K. Teller, Anti-perspirant stick, Pharma-Craft v. R. H. Macy & Co., Inc., Injunction issued against defendant July 30, 1956. Atlanta.

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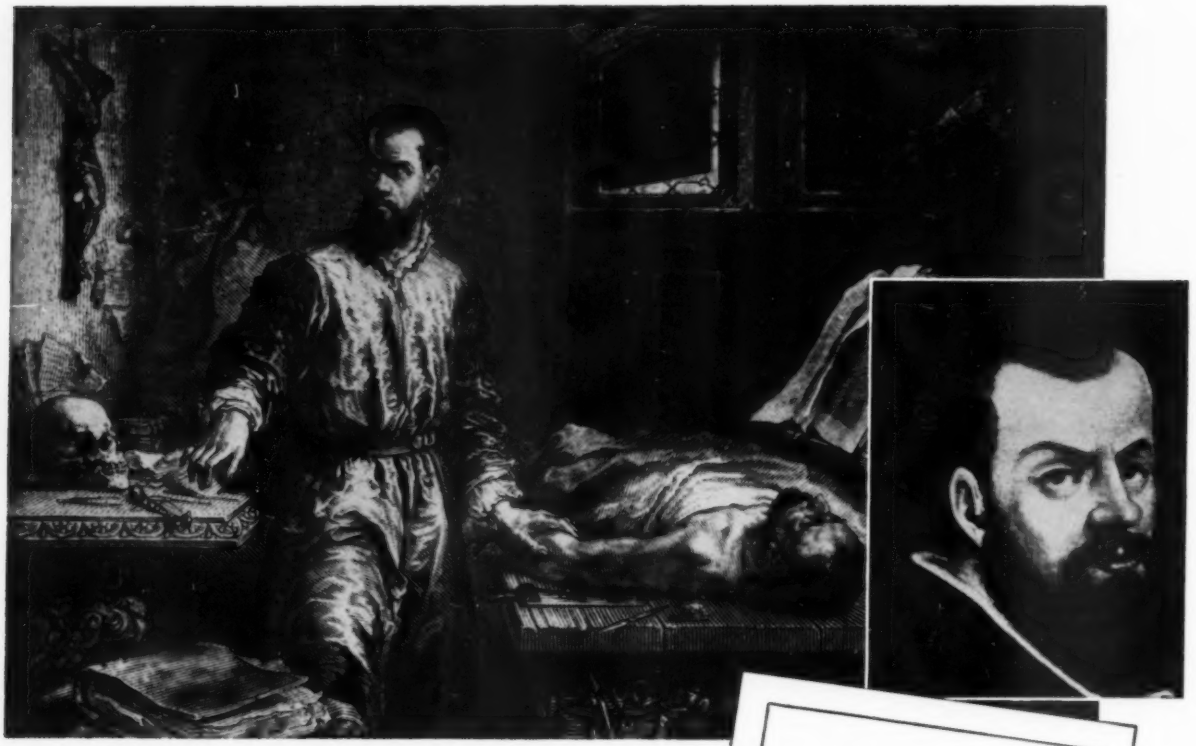

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ANDREAS VESALIUS (1514–1564). Noted Belgian anatomist who was among the first to dissect the human body to study anatomy. His findings were of great value in the advancement of treating disease. Illustration shows him in his room about to begin work on a cadaver.

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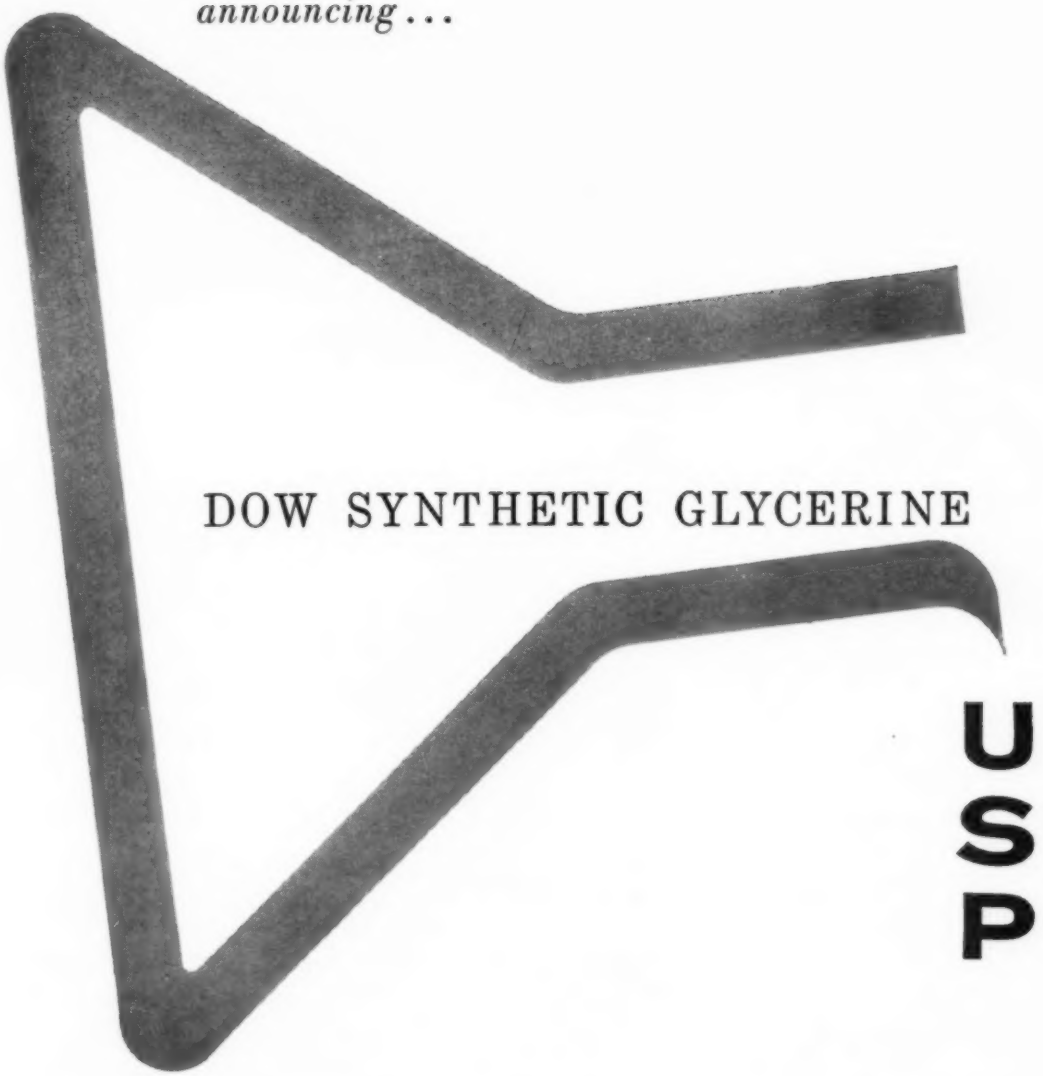

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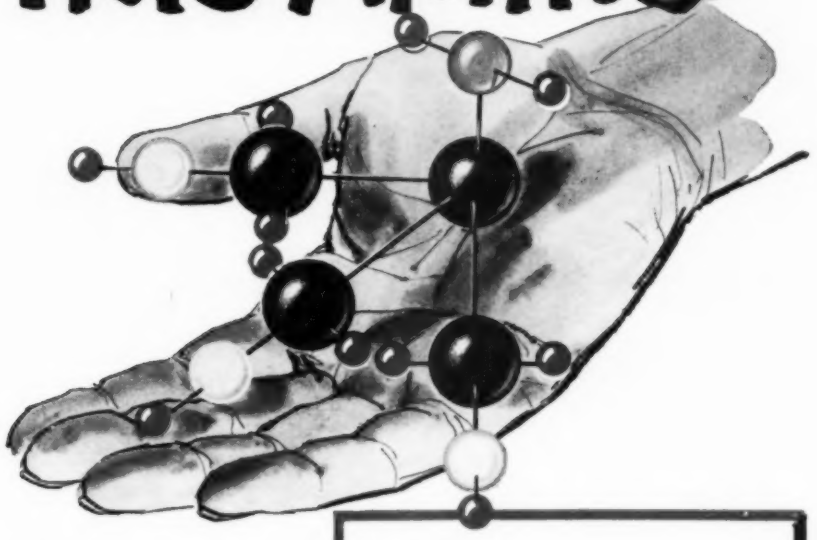

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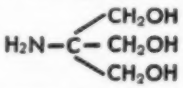

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Melting Point, °C	171-172
pH of 0.1M Aqueous Solution at 20°C	10.4
Solubility in Water at 20°C, g/100 ml	80

Other Aminohydroxy Compounds

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AMP (2-Amino-2-methyl-1-propanol)
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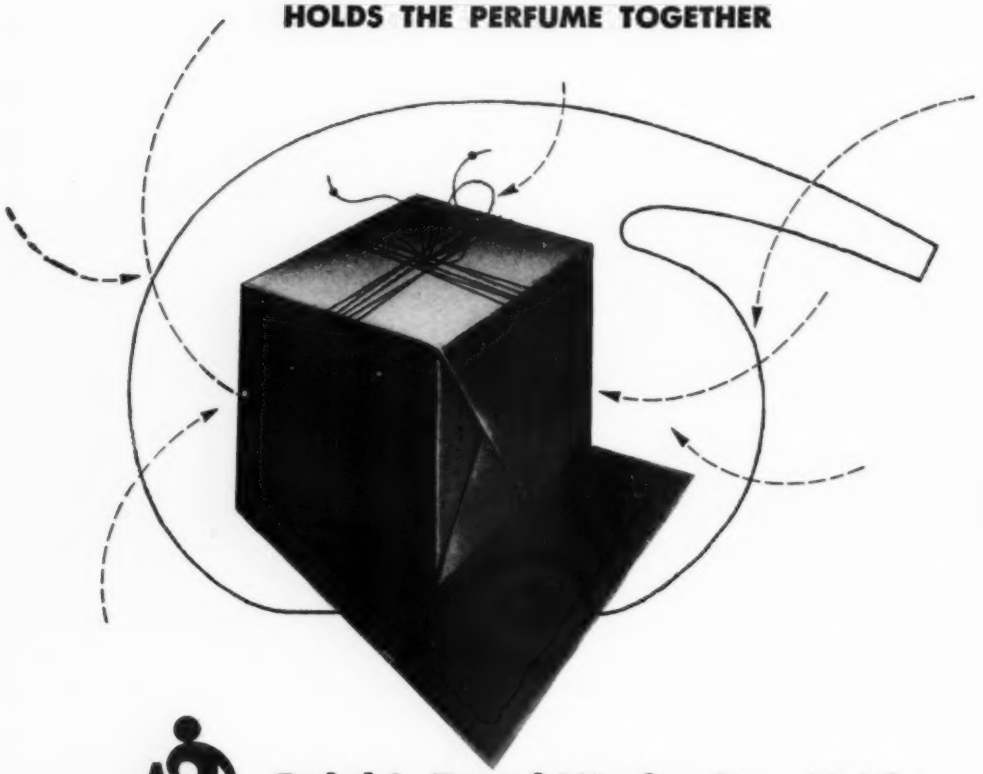

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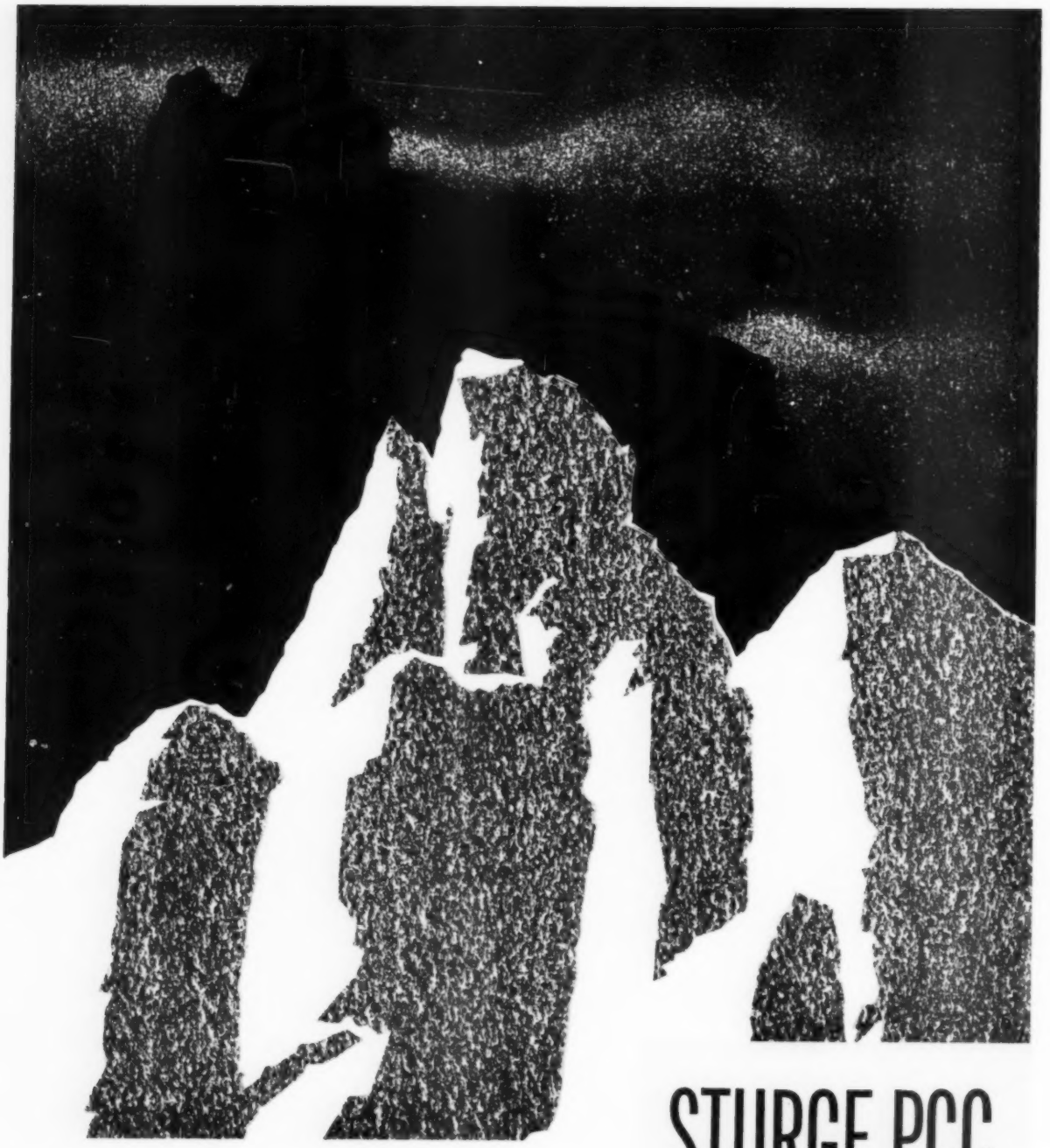

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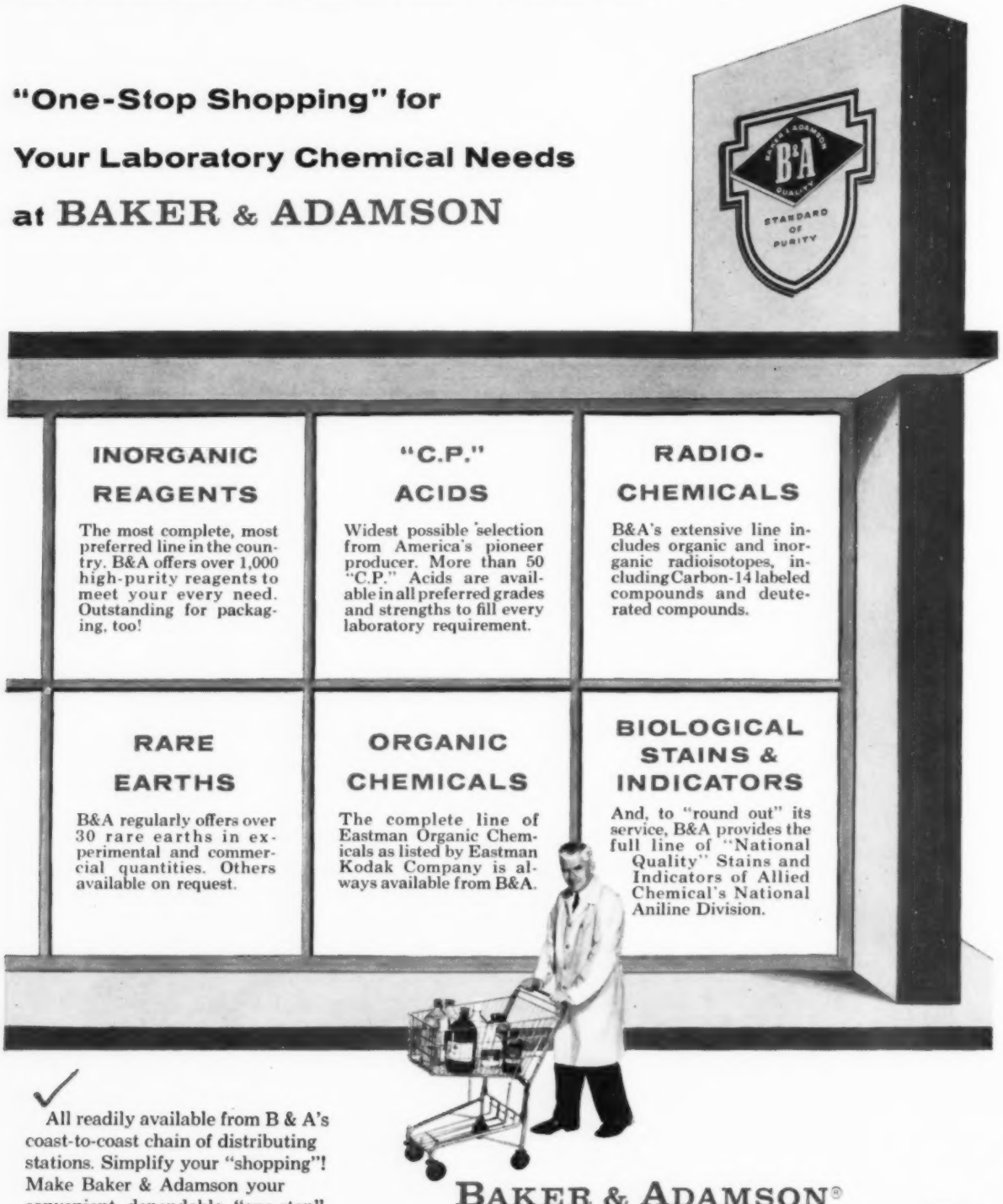
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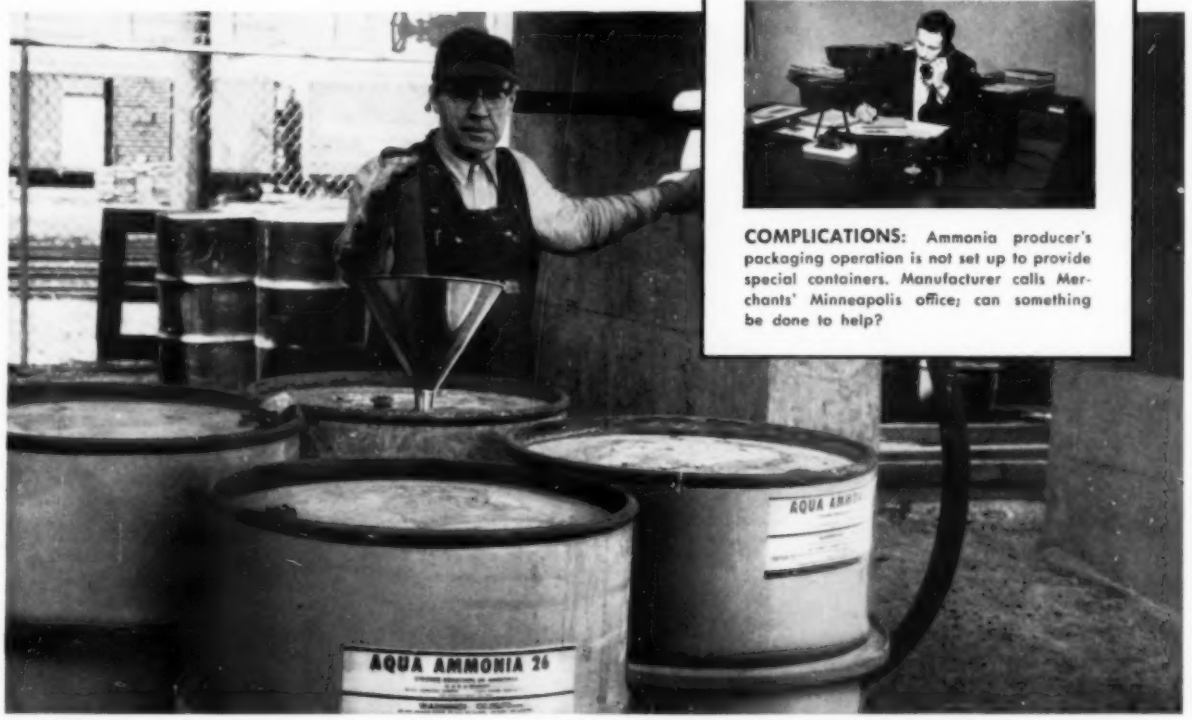

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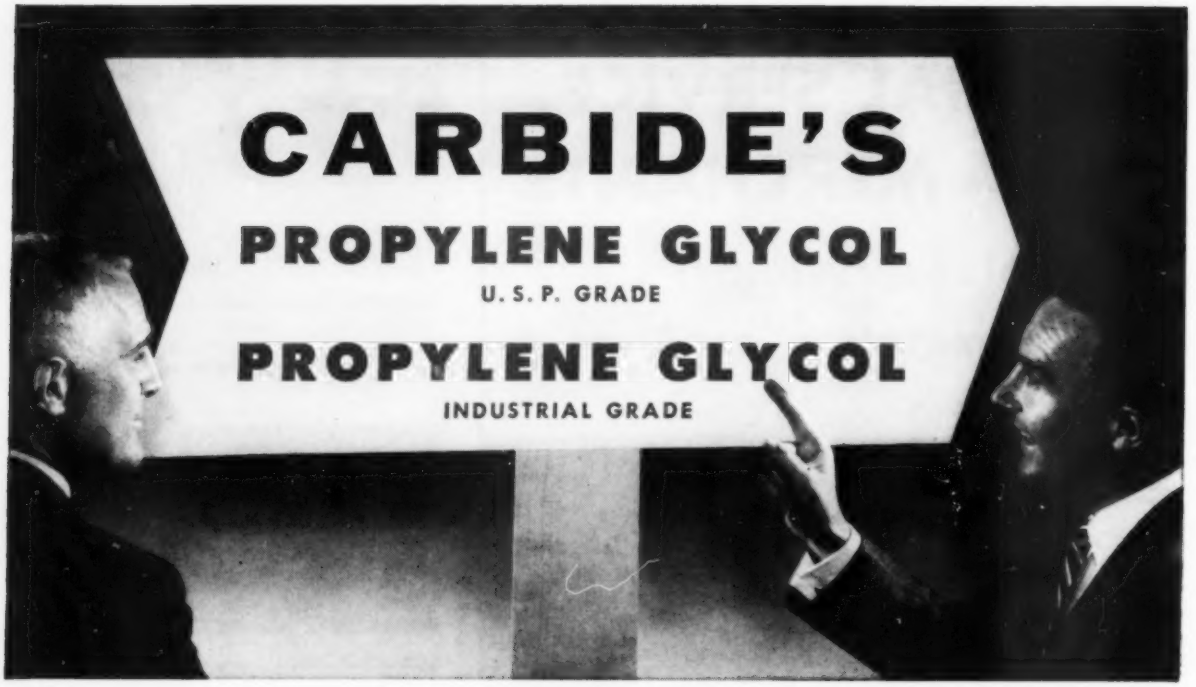

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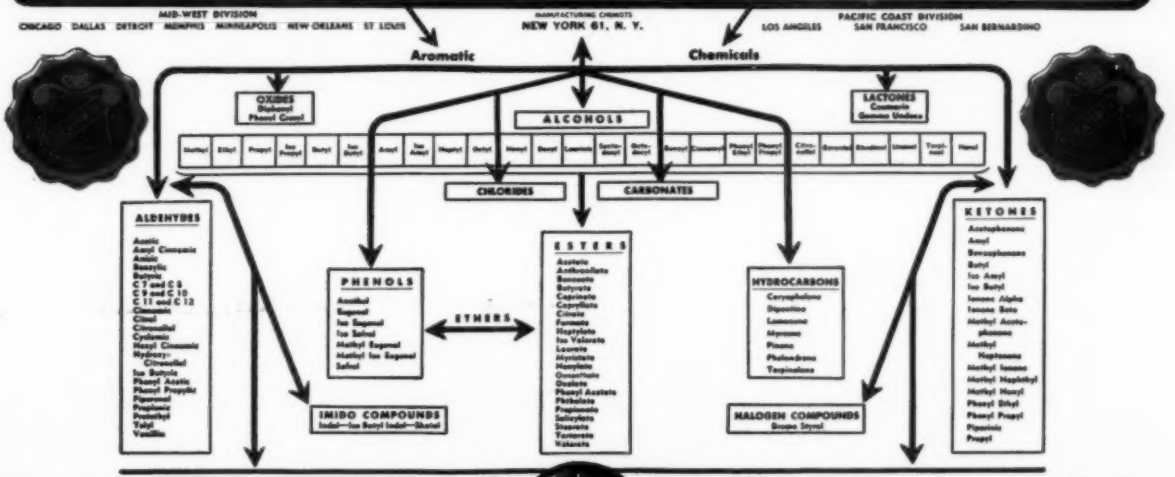

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Year in
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B.F.Goodrich Chemical *raw materials*

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CARBOPOL...

Unique thickening agent provides the right body... smooth slip... long shelf life

A leading hand lotion is now using Carbopol 934 to make a good product better. This highly effective thickening agent is formulated to give the exact viscosity desired. The lotion has remarkable stability, has successfully passed shelf life tests of over two years.

In lotions, polishes, pharmaceuticals—or in solvents, paints, industrial compounds—Carbopol 934 can improve quality and performance, provide outstanding resistance to aging. You can select the pH and salt form best suited for your specific needs; thus this basic material can be adapted to a wide range of requirements.

Where you need a superior thickening or suspending agent, investigate Carbopol. We'll be glad to furnish experimental samples and technical data. Write Dept. JB-6, B. F. Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

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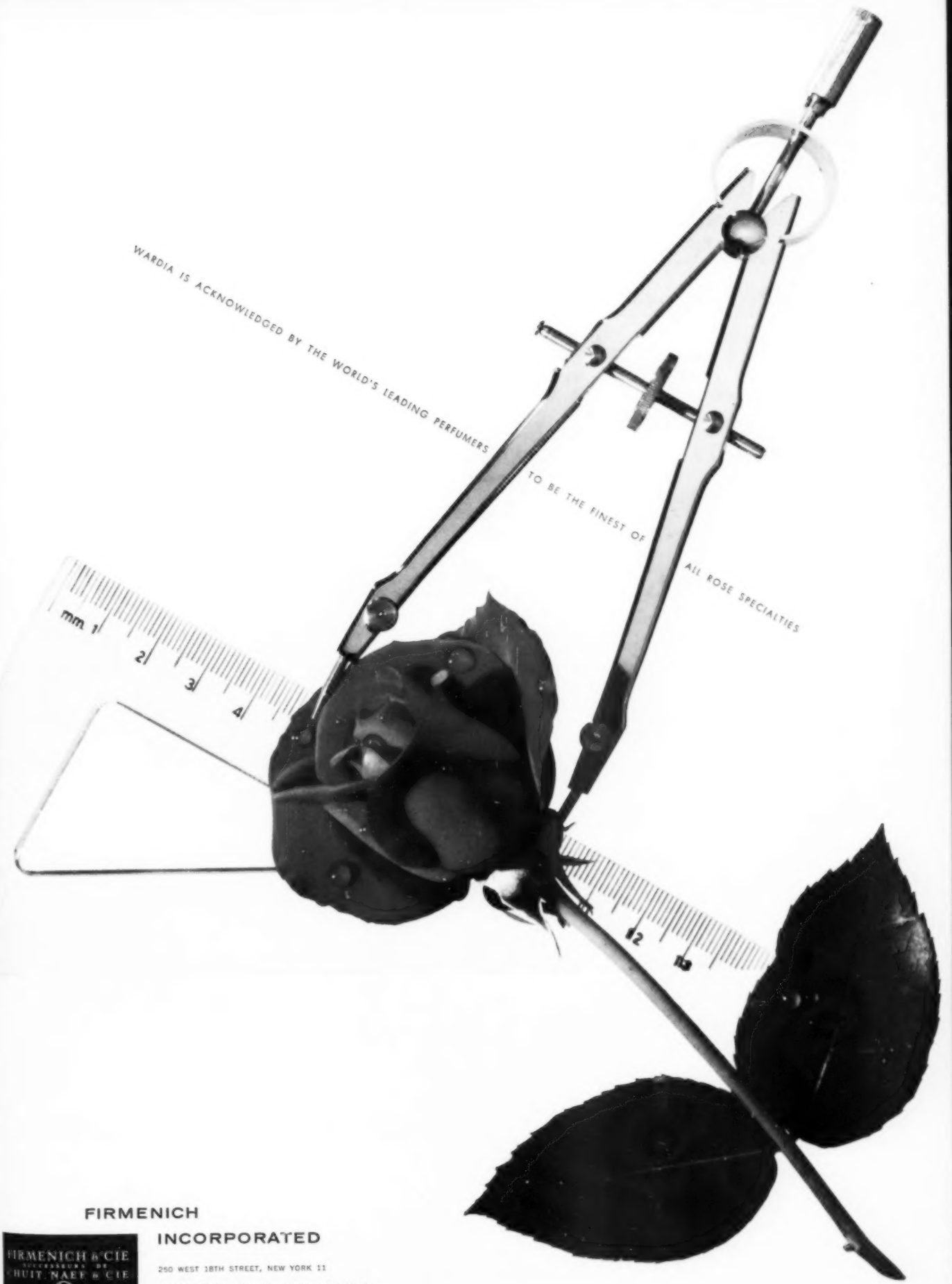

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SORBITOL, MANNITOL AND RELATED POLYOLS • EMULSIFIERS, SOLUBILIZERS

Using TWEEN® surfactants to make clear "solutions" of insoluble materials

Perfume oils, antiseptic agents, essential oils and many other water-insoluble ingredients of cosmetic formulas can be made into clear aqueous "solutions," by solubilizing with TWEEN surfactants. This technique makes it possible to reduce or eliminate entirely the use of alcohol for dissolving these materials. The TWEEN products are polyoxyethylene sorbitan fatty acid esters.

The preparations thus produced are transparent emulsions. They look as clear as true solutions by transmitted light. Actually they are dispersions of colloidal dimensions, and show the characteristic light cone when examined by the Tyndall cone test. Usually no filtration is needed to obtain clarity.

Perfume oils are readily solubilized in water by this method. Three to five parts of the Atlas surfactant are usually needed per part of oil. Certain oils may require as much as nine parts of solubilizer. The dispersion can be diluted with water as much as desired, without loss of clarity.

Solubilizing requires an HLB (Hydrophile-Lipophile Balance) value in the approximate range of 15 to 18. Usually a liquid, rather than a waxy, surfactant is preferred. Most widely used Atlas products are TWEEN 20, TWEEN 60, TWEEN 80 and G-2162.

Antiseptic Agents. Many oils, powders and crystalline materials that are insoluble in water can be solubilized. For example, hexachlorophene, a widely used antiseptic and germicide, is a water-insoluble powder. It can be incorporated into shampoos and clear hair dressings, by solubilizing with eight parts of TWEEN 40 or TWEEN 60. The surfactant is heated to 70° C., stirred while the hexachlorophene is dissolved. The mixture is cooled to room temperature, and water is added slowly with agitation.

We'll be glad to supply samples and specific recommendations on your solubilizing application.

Want emollient effects? Try water-soluble Atlas lanolin derivative

An Atlas lanolin derivative which is readily dispersible in water makes it easy to incorporate the recognized emollience of lanolin in a variety of aqueous cosmetic products . . . without the limitations of insolubility that often complicate the use of lanolin itself.

This material, named Atlas G-1790, is a polyoxyethylene derivative of lanolin. Tests show that it provides emollient effects similar to lanolin.

It can be used as the sole emulsifier in O/W emulsions, either as the complete source of lanolin or with additional quantities of lanolin. It can also be used as an auxiliary emulsifier to supplement beeswax or stearate soaps or other surfactants.

In W/O emulsions, G-1790 can be used with lanolin to assist emulsification and reduce the need for milling.

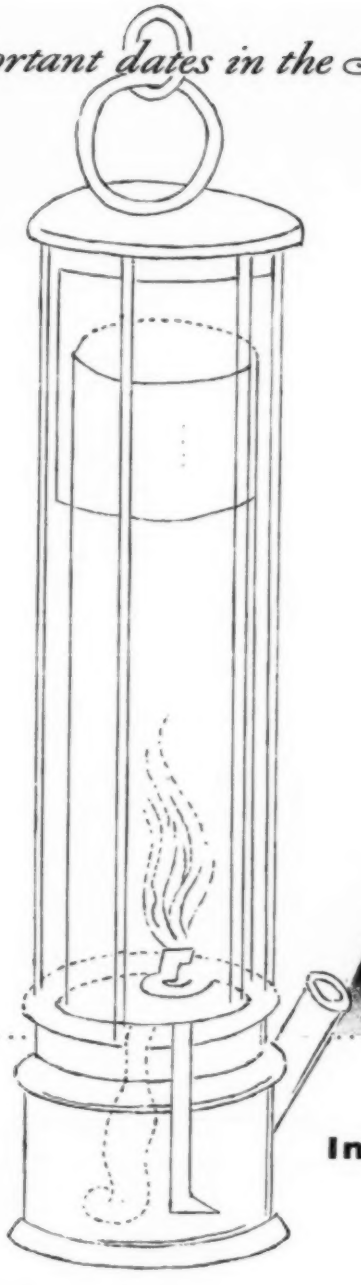
In hair dressings, it can be used both as a source of lanolin and as a means of solubilizing essential oils.

Write to Atlas for technical data and samples.

Forward-looking formulators use ATLAS products

. . . like Rayette, Inc., of St. Paul, Minn., famous maker of "Rayette 7 Seas Lotion" . . . well-known germicidal dandruff treatment . . . and other leading professional hair preparations.

Important dates in the History of Industrial Progress



1816

In mining . . .

For English coal miners whose output fueled the Industrial Revolution, Sir Humphrey Davy's invention of the miner's safety lamp greatly lessened the hazards of their occupation. Fewer mine disasters meant more coal for Britain's infant industries.

In the history of fats and waxes

GROCO 55 — TRIPLE PRESSED STEARIC ACID

Titre	54.5°-55.2°C.
Titre	130.1°-131.4°F.
Color 5¼" Lovibond Red	0.5 max.
Color 5¼" Lovibond Yellow	1.5 max.
Unsaponifiable	0.05% max.
Saponification Value	208 – 212
Acid Value	207 – 211
Iodine Value (WIJS)	4.0 max.

Chevreul, who gave us our modern concept of fatty substances, observed early in his work that the solid acid isolated from mutton tallow had a higher M.P. than that obtained from pork fat. This observation culminated in the preparation of stearic acid in 1816. Since that time stearic acid has become a vital raw material for many products, including candles, cosmetics, buffing compounds, textile softeners, food emulsifiers and pharmaceuticals.

In 1837, A. Gross & Company entered the infant fatty acid field and has since pioneered in the improvement of refining techniques for these materials. Specifications for GROCO 55 — TRIPLE PRESSED STEARIC ACID show at a glance the high purity and stability characteristics which have been built into the best stearic acids of today.

Send for samples and catalog "Fatty Acids in Modern Industry."

A. GROSS & COMPANY

295 Madison Avenue, New York 17, N. Y.

Factory: Newark, N. J. Distributors In Principal Cities

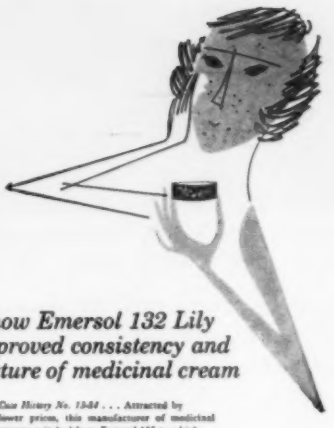
Manufacturers Since 1837

Only Emersol Stearic & Oleic Acids Give You

PROVEN VALUE!

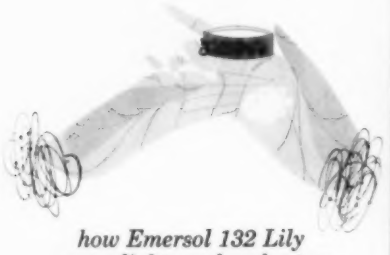
The real difference in fatty acids cannot be detected merely by observing the acid itself, or even by laboratory examination. They are evidenced only in processing in your plant and in the sales-appeal and keeping qualities of your product. On this basis, a comparison of available stearic and oleic acids will show that the controlled composition and outstanding stability of the Emersol® grades give you the *greatest value* through: 1) consistent manufacturing performance, 2) lighter-colored and higher quality products, 3) lower over-all costs, 4) consistent bland odor, both initially and after aging, for uniform perfuming, 5) longer shelf life, and 6) consistent performance in the hands of your customers.

Confirmation of these extra values lies in actual customer experiences, some of which are reproduced below. And since Emersol Stearic and Oleic Acids cost no more than competitive grades, why not order your next requirements from Emery and obtain such benefits yourself?



how Emersol 132 Lily improved consistency and texture of medicinal cream

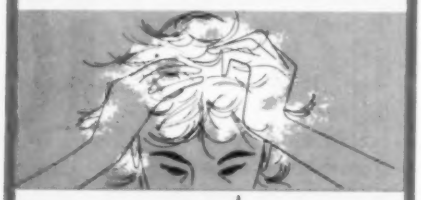
Case History No. 13-44 . . . Attracted by lower prices, this manufacturer of medicinal creams switched from Emersol 132 to a high-quality hydrogenated solid acid. Immediately, the non-crystalline structure of the latter product reflected in an objectionable change in the texture and consistency of the cream . . . substantially reducing its performance and sales-appeal. The switch back to crystalline Emersol 132 Lily eliminated all difficulties.



how Emersol 132 Lily gave lighter-colored esters for cosmetics and toiletries

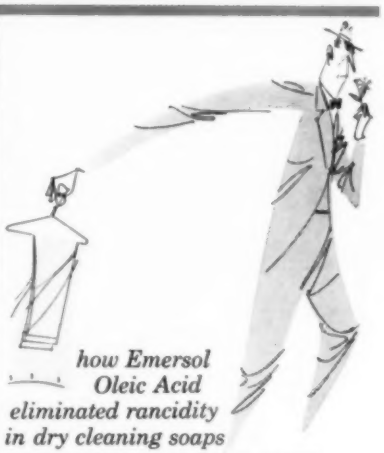
Case History No. 12-51 . . . Because of the higher purity associated with lighter-colored products, this well-known manufacturer of esters was approached for lighter-colored monostearates for use in cosmetics, toiletries, and similar type products. Since esters are exposed to high temperatures during manufacturing, this producer's logical approach was to investigate the color stability of his ingredients. On checking various stearic acids, he found that the outstanding color stability of Emersol 132 Lily gave him exceptionally light-colored monostearates, far better than those from all others tested. And since Emersol 132 costs no more than competitive triple-pressed grades, this extra "sales-appeal" cost him nothing.

Emersol® 211 Elaine increased sales appeal of premium shampoo



Case History No. 22-42: A well-known manufacturer of premium shampoos replaced the ordinary single-distilled oleic acid in his formulation with Emersol 211 Low Titer Elaine because of its uniform color and greater resistance to color change during aging. The resultant uniform color of his shampoos produced greater consumer acceptance and subsequently greater sales.

While uniformity of color was this manufacturer's primary concern, he found also that Emersol 211's outstanding oxidation stability, superior resistance to rancidity, uniform viscosity, and low unsaponifiable content, added materially to the overall quality and aging properties of his products. And since Emersol 211 costs no more than competitive grades, all these sales advantages were realized at no extra cost.



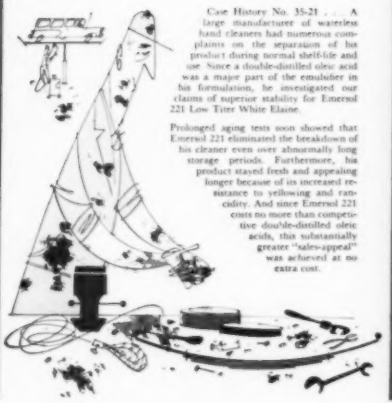
how Emersol Oleic Acid eliminated rancidity in dry cleaning soaps

Case History No. 35-54 . . . To reduce complaints of odor in cleaned clothes, this well-known manufacturer of dry-cleaning soaps evaluated the resistance to rancidity of all available high-quality oleic acids. His tests proved conclusively that Emersol 233 LL Elaine gave his product maximum resistance to rancidity . . . far better than any other oleic acid tested. In this case, not only were "odor" complaints reduced substantially, but an important sales advantage was gained over competitive dry cleaning soaps.

Emersol® 132 Lily withstood 2 years Storage with no ill-effects

Case History No. 2-51: A medium sized manufacturer of high-quality esters uncovered a number of bags of Emersol 132 Lily that somehow had escaped inventory rotation. Although the appearance and odor of the material was normal, he sent samples to us for assurance that it still met our high quality standards since his records indicated receipt 2 years ago. Our test results indicated that the Emersol 132 Lily was practically as good as the day it was made.

Emersol® 221 White Elaine eliminated breakdown of waterless hand cleaner



Case History No. 35-21 . . . A large manufacturer of waterless hand cleaners had numerous complaints on the separation of his product during normal shelf-life and use. Since a double-distilled oleic acid was a major part of the emulsifier in his formulation, he investigated our claims of superior stability for Emersol 221 Low Titer White Elaine.

Prolonged aging tests soon showed that Emersol 221 eliminated the breakdown of his cleaner even over abnormally long storage periods. Furthermore, his product stayed fresh and appealing longer because of its increased resistance to yellowing and rancidity. And since Emersol 221 costs no more than competitive double-distilled oleic acids, this substantially greater "sales-appeal" was achieved at no extra cost.

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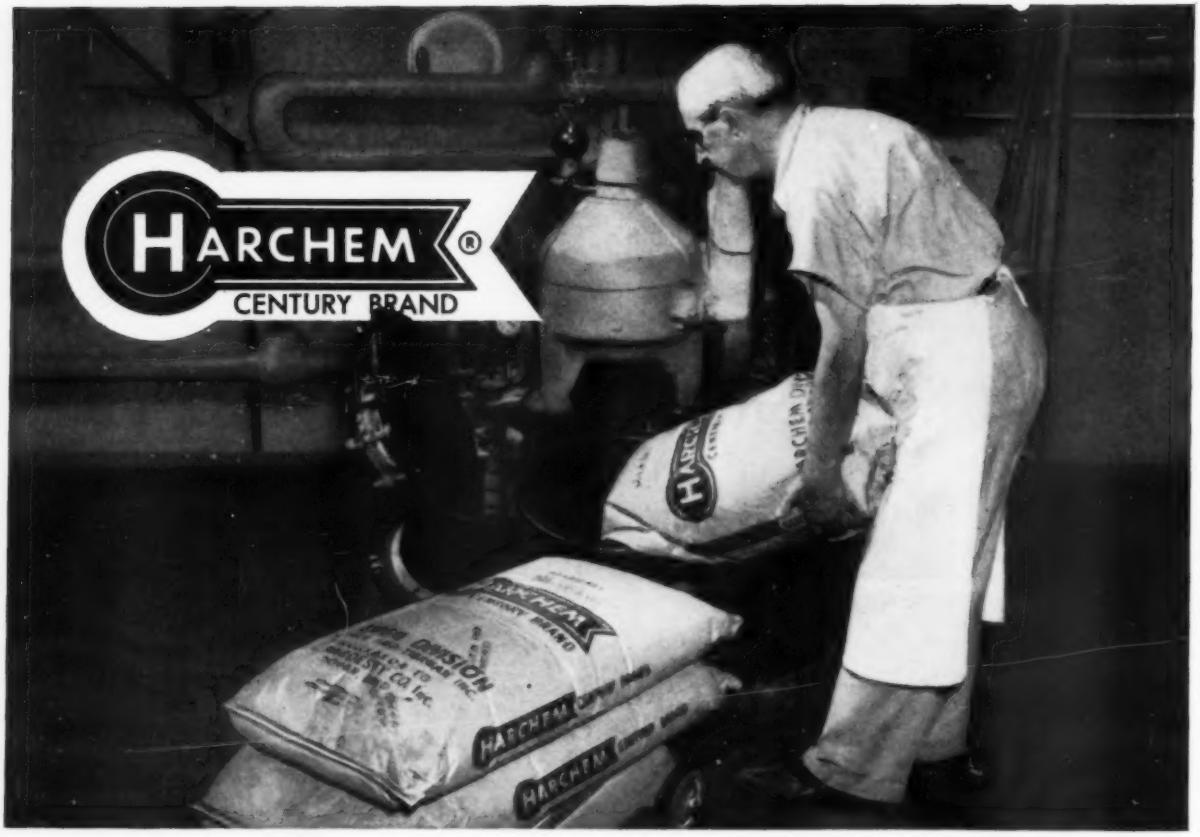

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With dicalcium phosphate or mannitol as a diluent. For use in tablets, capsules and oral liquids.

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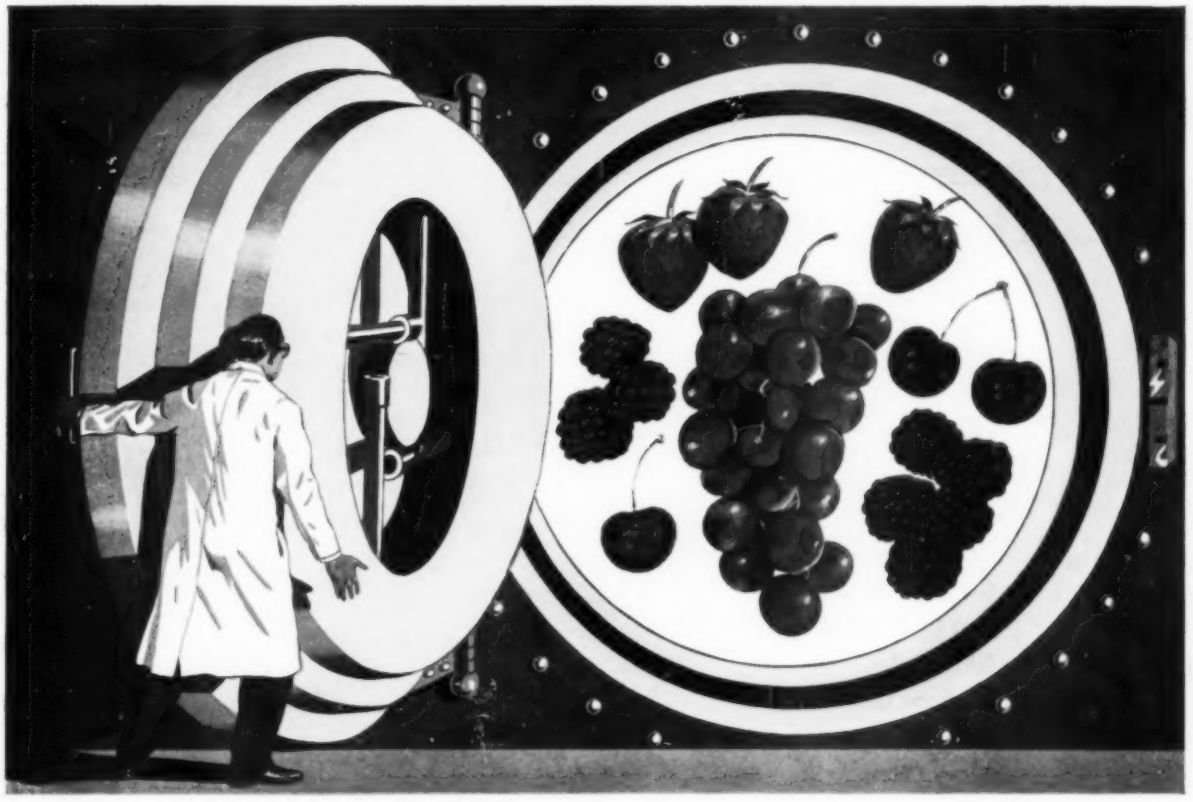

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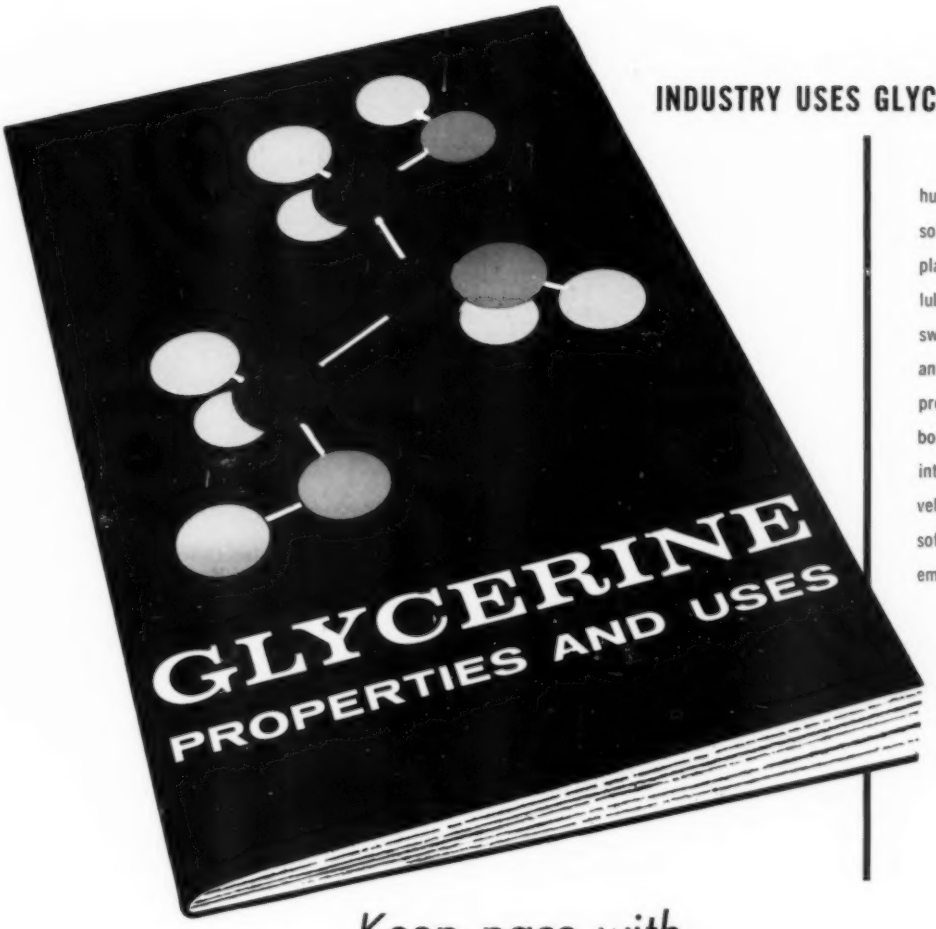

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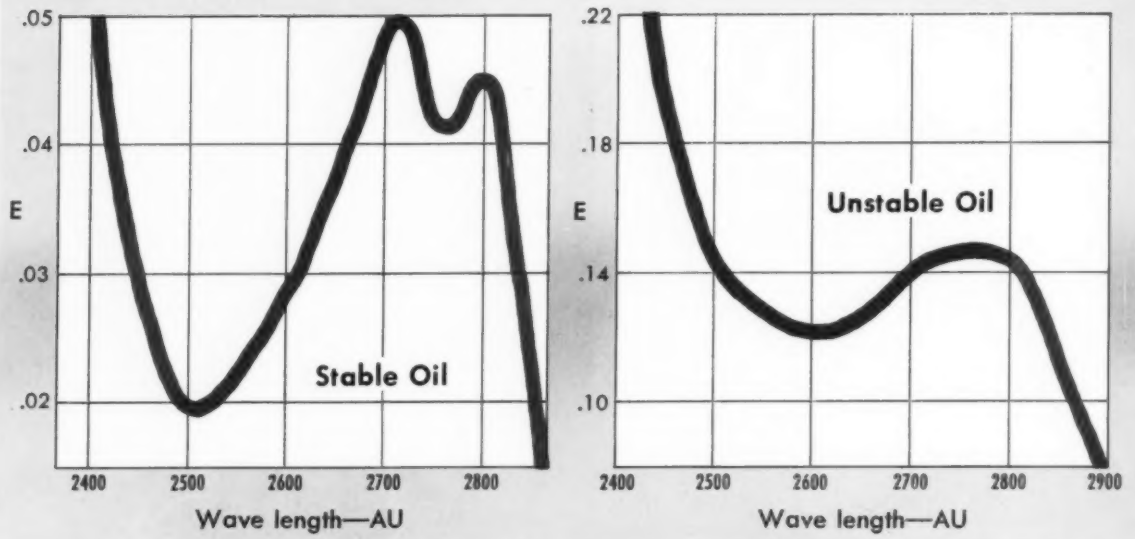

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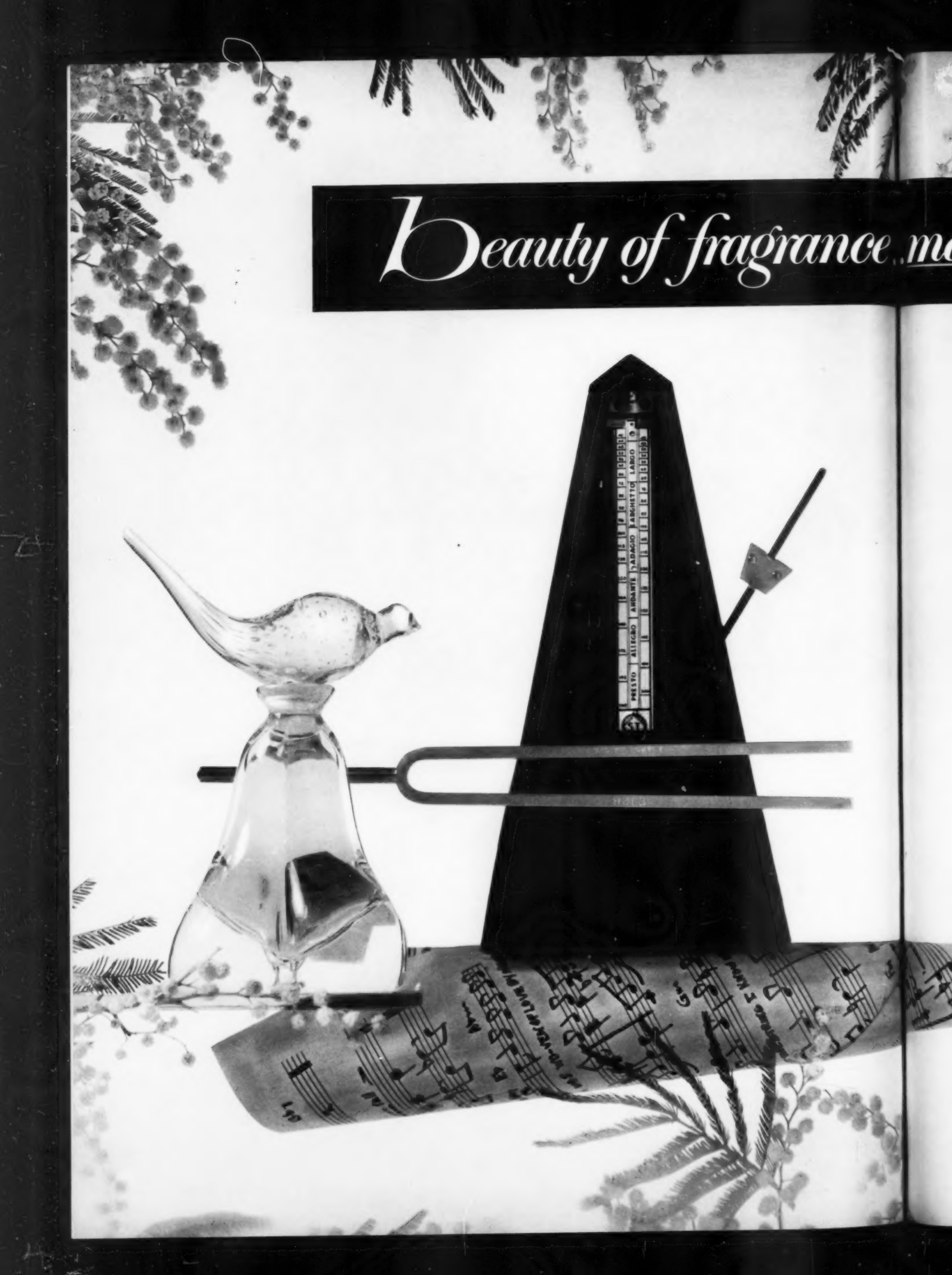
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Packaging and Selling

Award-Winning Aerosols

"Black Satin Spray Cologne," above, by Angelique & Co. won first place in the glass and plastic aerosols category of the Chemical Specialties Manufacturers Association's fifth annual aerosol packaging contest. "Matinee Hair Spray," right, by Scent de Paris Company, Toronto, Canada, was the winner in the hair preparations classification. Other prize-winning packages were "Rex Witch Hazel Shaving Cream" by Rexall Drug Company, in the shaving preparations class, and "Tartan Sun Lotion," by McKesson & Robbins, Inc. in the personal products category.

OWENS-ILLINOIS ASSURES YOU A

Co-ordinated Research

Pure research into formulae and fabrication of glass, *packaging research* into processing and handling methods in customer plants, and *market research* into consumer attitudes, add up to greater specific value for your packaging dollar

Engineered Design

The package that takes your product to market must take *three* needs into account. Considerations of its function in the retail store, its operating efficiency and its consumer utility all become a part of the prescription for an Owens-Illinois package.

The Right Container

Versatility of facilities enables Owens-Illinois to supply containers to meet special needs: Duraglas containers for almost any item; Libbey Safedge packing tumblers or premiums; Kimble Ampuls and Vials; and a variety of Owens-Illinois plastic containers.

New liners protect vitamins, aspirins,

COMPLETE PACKAGING APPROACH

The Right Closure

Know-how as to the best available liner and closure – best for packing, displaying, or using a specific product – may well be one of the most important single points through which expert packaging counsel will reward you many times over.

Needed Fitments

With emphasis on the word "needed," Owens-Illinois specialists are keenly aware of sales benefits possible through use of plastic shaker and pour-out fitments which are not "gadgets" but which increase consumer satisfaction with your product.

Merchandising Cartons

Modern cartons are developed only through systematic consideration of their opportunity to serve you in the retail store and retail warehouse as well as on your own filling line and in transit. Owens-Illinois is pioneering such developments.

medicinal oils and cosmetics

Owens-Illinois develops new liners to seal liquid and dry products from oxygen and moisture

Here is another example of the practical results drug packers expect of research and development at Owens-Illinois.

With a definite need for closure liners that offer greater protection, Owens-Illinois developed a series of new coated foil liners . . . one for every type of liner application.

The L-56 and L-60 are for vitamins and aspirins, as well as many types of medicines and cosmetics, in both liquid and dry form.

The L-57 is for medicinal oils, oily cosmetics and many other liquid products.

The L-58 is designed expressly for medicine and cosmetics that need the added protection of a tin foil facing.

The L-56, L-57 and L-60 are plastic-coated aluminum foil liners which provide near-perfect oxygen and moisture barriers. This extra protection helps guard flavor and aroma and, in many cases, extends shelf life. Like to know more about all four liners? A custom-designed Duraglas container? Or the complete package? Just call your Owens-Illinois representative.

METAL AND PLASTIC CLOSURES
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

A crowning achievement in debossed molded caps

Here's a molded cap with a truly regal look about it! It's the new Seagram's Pedigree cap, and it shows the wonders an exclusive new molding process can work with plastic. Notice the attractively debossed insignia on the top of the crown . . . the shielded monograms on the skirt . . . and how the wiped-in antique finish gilds the crown in unusual beauty. This distinctive effect is only one example of the finishes and designs now possible in molded caps. Cloth, wood, leather, metallic, and other textures all can be debossed on the top or skirt of your molded cap. See your Armstrong man for samples and complete data or write Armstrong Cork Company, Glass and Closure Div., 5311 Chester St., Lancaster, Pennsylvania.

Armstrong MOLDED CAPS

Watch Armstrong Circle Theatre every other Tuesday evening on NBC-TV

doctor . . . housewife . . . indian chief

ALMOST EVERYONE USES A PLASTIC PACKAGE BY CONTINENTAL

Take another look at this picture—and see if there isn't some plastic package that Continental can make for you.

Need a rigid container like the plastic cup? Polystyrene is crystal clear and displays your product to its best advantage.

Or plastic bottles . . . Continental turns them out in a wide range of sizes and shapes, in a whole rainbow of colors.

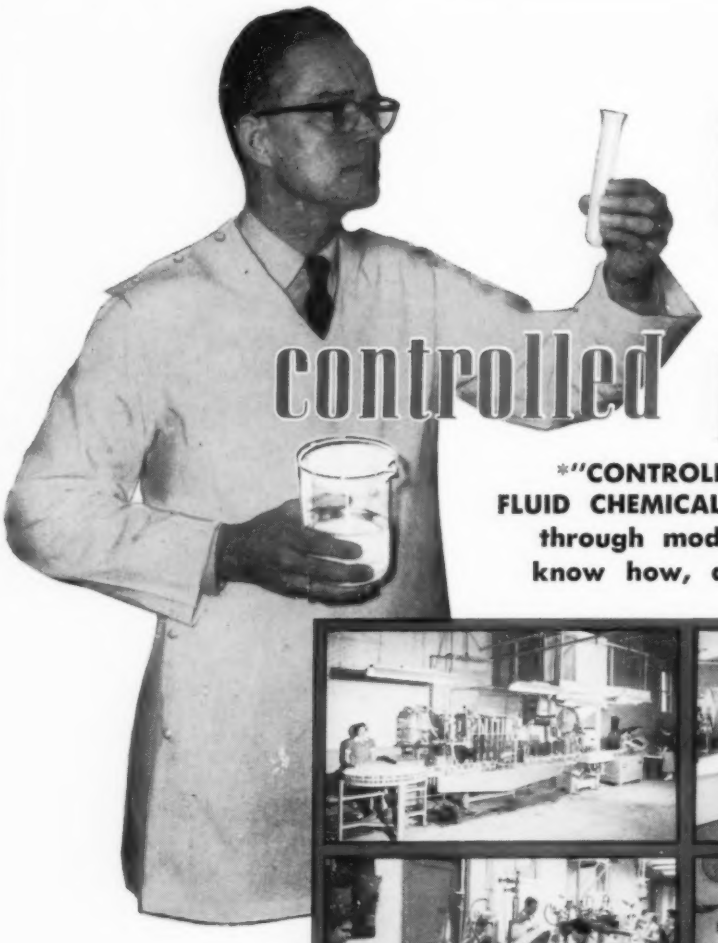
Maybe you need a finely-engineered part like the Turret Seal Cap. We make a variety of bottle accessories to spray, sprinkle, or pour. And we also make custom design containers such as the medicinal case and the clear plastic capsule case.

Plastic packages will help you sell your product. Our tailored-made service means follow-through from idea to finished product, assures you of best results. So, call on us soon.

CONTINENTAL CAN COMPANY

PLASTIC CONTAINER DIVISION

100 EAST 42ND STREET, NEW YORK 17, NEW YORK • 2930 NORTH ASHLAND AVENUE, CHICAGO 13, ILLINOIS



controlled packaging*

***"CONTROLLED PACKAGING" by FLUID CHEMICAL COMPANY is accomplished through modern machinery, technical know how, and years of experience.**

You will recognize, from this partial list, some of the present users of FLUID'S extensive facilities:

CARTER PRODUCTS — HOUBIGANT, INC — JOHNSON & JOHNSON
LEHN & FINK PRODUCTS CORP. — LENTHERIC, INC. — LEVER BROTHERS
NORWICH PHARMACAL CO. — PRINCE MATCHABELLI, INC. — REVLON, INC.
ROUSSEL CORPORATION — WARNER-LAMBERT PHARMACEUTICAL — J. B. WILLIAMS

For a safer and more reliable contract filling service on your products, you can depend on FLUID'S new "CONTROLLED PACKAGING." This unique economical service is available on individual products or for your complete requirements. As we manufacture no products of our own, you are always assured the personal attention and service your brands deserve. *For your contract packaging needs, write or phone FLUID today.*

"First in Contract Packaging"

FLUID

CHEMICAL COMPANY INC.

879 MT. PROSPECT AVE., NEWARK, N. J.

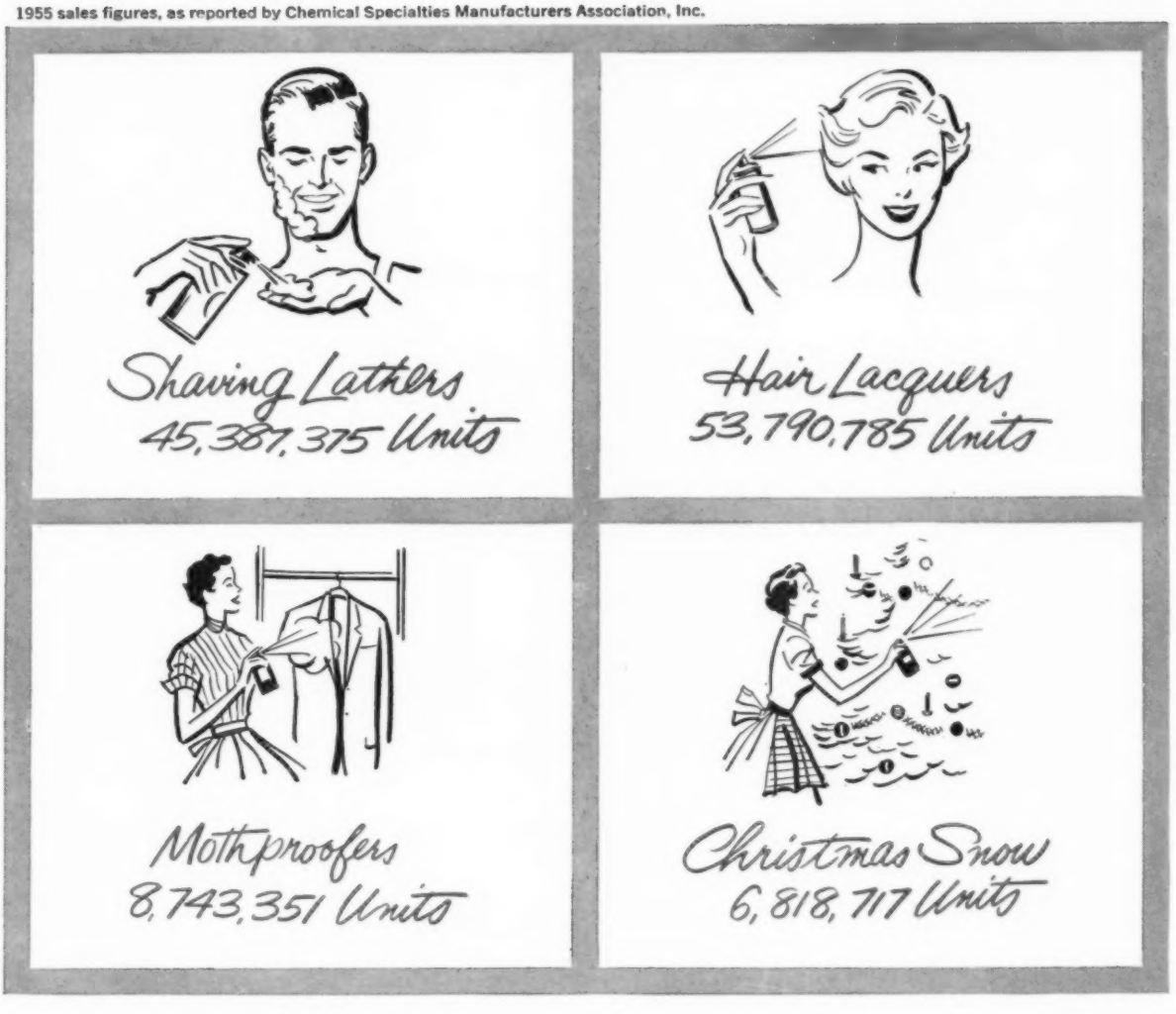
Telephone: HUmboldt 5-2880

PRODUCTS: AEROSOLS—GLASS AND METAL
LIQUID—TUBE—JAR—DRY PACK FILLING
RESEARCH • DEVELOPMENT

FOUNDED 1921

About Aerosols?

1955 sales figures, as reported by Chemical Specialties Manufacturers Association, Inc.



into this high-profit field the low-cost way!

First choice of leading contract fillers and aerosol marketers for formulating household, drug, cosmetic, agricultural, industrial and other types of aerosol products, "Genetrons" provide the right pressures, the right compatibilities, for every aerosol product and every type of container.

CALL GENERAL CHEMICAL TODAY! For helpful facts and figures on the aerosol market, including data on many promising new types of aerosols . . . for help in developing the right propellants and formulations for your product–*without cost or obligation!* Ask for our special brochure: "How To Push Up Profits With Aerosols." It contains a list of Contract Fillers who can help you get into aerosols the easy, economical way!

Write to
"Genetron" Department
GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

GC Allied Chemical

Basic Chemicals for American Industry

408...

a STOCK DESIGN that has a CUSTOM-STYLE LOOK

This attractive bottle gives your product an unmistakable touch of elegance. For regular lines or special promotions it's a proved performer . . . one that deserves your special attention. Available in a range of 7 sizes, from 2 drams to 8 ounces. Supplied either plain or with fired-on ceramic labels.

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Christmas Greetings....

and Happiness Throughout the Year

CONTINENTAL CAN COMPANY, INC.

HAZEL-ATLAS GLASS DIVISION

An Imaginary Portrait of a Great Inventor...

Unheralded and Unsung

Last year more than a billion collapsible metal tubes were used in the United States—for toothpaste, shaving cream, cosmetics, pharmaceuticals, household and industrial products. The list of uses grows steadily year after year because no package yet devised matches the metal tube in efficiency and in protection of the product.

The inventor of the tube, John Goffe Rand, lived without acclaim and died in obscurity. And his name has remained in oblivion since he patented his idea just one hundred fifteen years ago.

Unwittingly, every man, woman and child in this country pays homage to John Rand by the daily use of his invention. For there are few people who do not use a metal collapsible tube for some purpose each day.

Peerless Tube Company honors the one hundred fifteenth anniversary of John Rand's invention. We can do no less than continue to manufacture collapsible metal tubes of the finest quality. Our customers, leaders in the toiletry and pharmaceutical fields, would tell you there are no finer tubes made anywhere in the world.

Peerless Tube Company

Bloomfield, New Jersey

How to save up to 6¢ per unit

on your AEROSOL PRODUCT

It doesn't take a very sharp pencil to figure the profit you are losing when you ship your aerosol product from an eastern or mid-western warehouse to the west coast. Depending on the method of shipment, it can easily add 2¢ to 6¢ per unit to the cost!

No longer is it necessary to sustain these losses. By taking advantage of G. Barr & Company's new Los Angeles aerosol filling plant, high transportation costs can be EXTRA PROFITS for you and your west coast customers need not wait days for merchandise to arrive from the east . . . it can be made in the same market as it is sold.

With three complete, strategically located plants available—New York, Chicago, Los Angeles—arranging your custom aerosol production can be simplicity itself. Only one management to deal with, yet all three plants operating in accordance with the same high standards to exactly meet your specifications.

Whether your aerosol product is packaged in metal or glass, in thousands or millions of units . . . whether you have a product now on the market, or in the experimental or idea stage, you cannot afford to overlook the production and product development facilities G. Barr & Company provides.

We will be pleased to present exact figures.

WRITE, WIRE OR PHONE:

G. BARR & COMPANY

3601 SO. RACINE AVE., CHICAGO 9, ILLINOIS

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Because Imco Plastic Bottles are . . .

UNBREAKABLE

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. . . and your customers save in use!

No more costly breakage in your plant. No more costly shipments that arrive at your customers broken or dented.

And no more irate consumers mad at your product as they wipe it up off the floor in their home . . . because they dropped your container and it broke. Imco bottles are unbreakable, so they earn you thousands . . . even hundreds of thousands . . . of dollars in sales and handling profits every year. They're beautiful too, available in any shape and color under the sun. So why not let us talk with you about tailoring an Imco plastic container to your product's particular needs.

IMCO BOTTLES SHOW THE FLEXCEL® TRADEMARK

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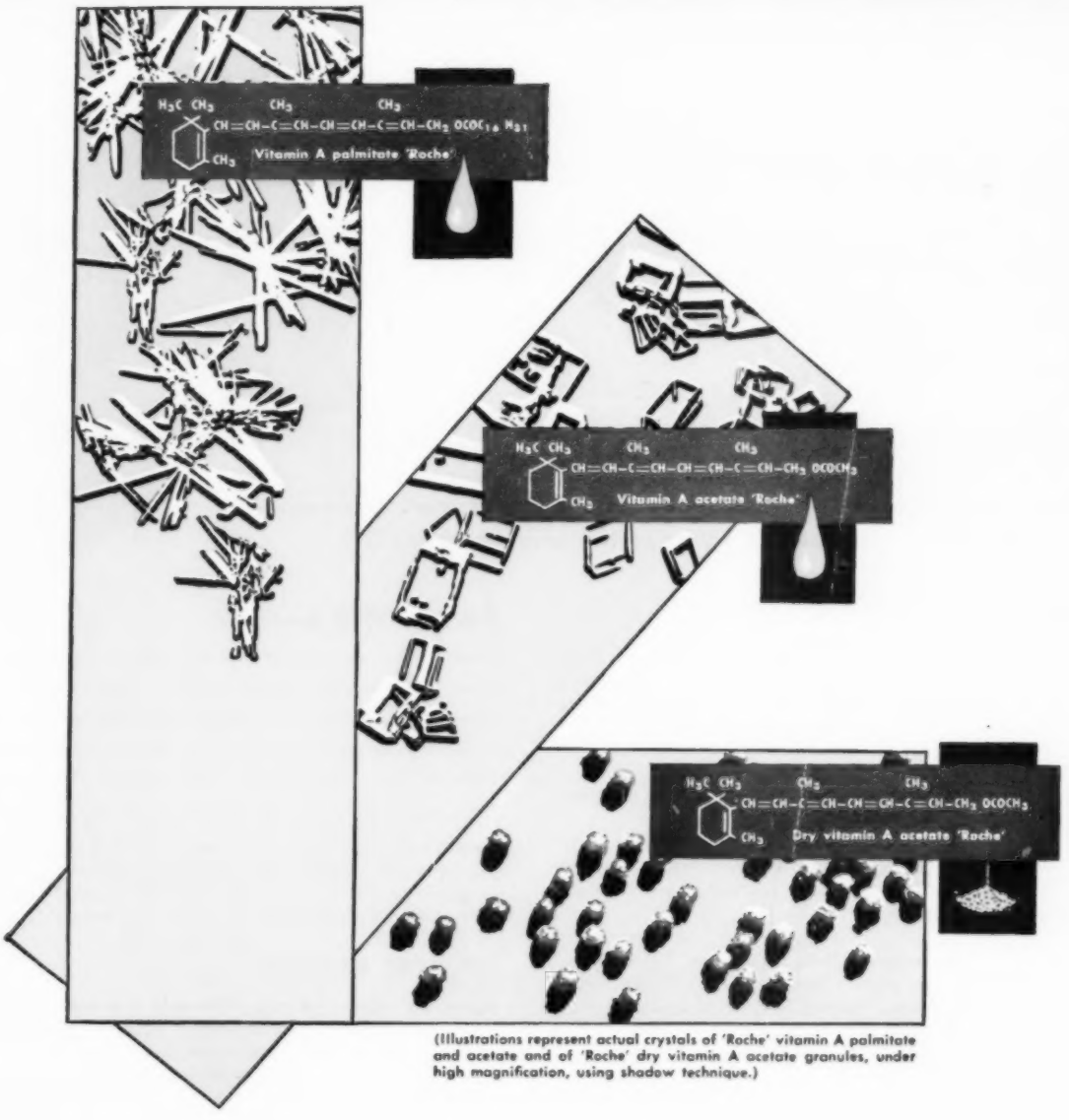
608 McCall Bldg.
Memphis, Tenn.

Palmolive Bldg., 919 N. Michigan Ave
Chicago, Illinois

4515 Olive St.
St. Louis, Mo.

5957 South Western Ave
Los Angeles, Calif.



(Illustrations represent actual crystals of 'Roche' vitamin A palmitate and acetate and of 'Roche' dry vitamin A acetate granules, under high magnification, using shadow technique.)

VITAMIN A COMES RIGHT FROM ROCHE

Roche has proved time and again that it is a source of vitamin A far superior to the livers of fish. Look at these advantages of 'Roche' vitamin A—stability • uniformity • no "fishy" taste or after-taste • high purity • constant availability • economy.

Roche produces all the popular types of vitamin A — the liquid types, the dry types, and the special types — to meet the most exacting requirements of purity for margarine and food manufacture, and the most rigid U.S.P. standards for pharmaceutical manufacturing — by the tons, by the famous Roche synthesis.

Roche assures the utmost excellence, the utmost experienced care, and the quality you require. Packaging designed with your needs in mind brings you vitamin A right, from Roche.

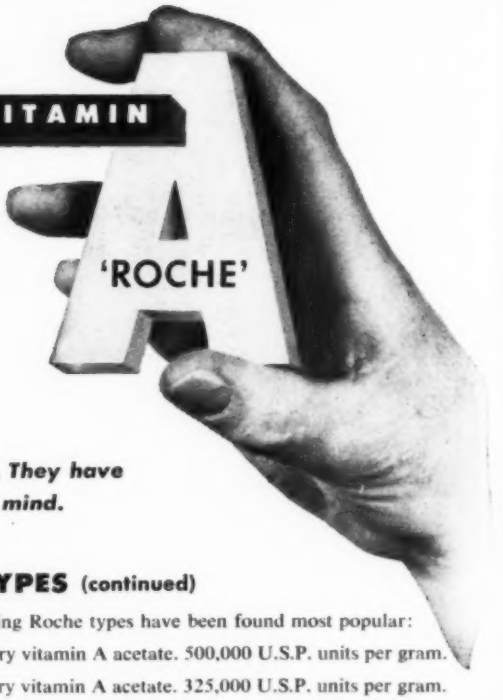
ORDER *right* . . . ORDER *from Roche*

VITAMIN DIVISION

HOFFMANN-LA ROCHE INC.

NUTLEY 10, NEW JERSEY, NUTLEY 2-5000 • NEW YORK: OXFORD 5-1400

Roche has all types of Vitamin A
-for pharmaceuticals
food products
cosmetic preparations



Take your choice of the following types of vitamin A 'Roche'. They have been made especially with your particular problems in mind.

LIQUID TYPES

Type P1MO vitamin A palmitate—1,000,000 U.S.P. units per gram, standardized by addition of edible vegetable oil. This type is a highly refined product containing well-proven stabilizing factors of the Roche synthesis. *Experience has shown that this type meets the great majority of requirements.*

Type P1MO/ BHA vitamin A palmitate—Same as type P1MO above plus antioxidant protection.

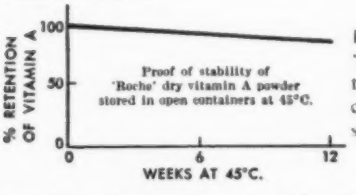
Type A1MO vitamin A acetate—1,000,000 U.S.P. units per gram, standardized by addition of edible oil. Contains well-proven stabilizing factors of the Roche synthesis.

Type P1.3 vitamin A palmitate—Ranging between 1,350,000 and 1,650,000 U.S.P. units per gram. Contains no oil addition. Ideally suited for oil-free preparations. Stability is similar to type P1MO.

Packaging—All liquid types of 'Roche' vitamin A are packed under inert gas in seamless containers. Nominal quantities are shipped in widemouth aluminum bottles. For large orders, a specially-designed aluminum transport can holding 50 kilos is recommended. A dispensing attachment is available.

DRY TYPES

'Roche' dry vitamin A acetate, and vitamin A and D_2, powders have great advantages.



First, dry vitamin A acetate 'Roche' has high stability in tablets, hard and soft gelatin capsules, and powdered food supplements.

Second, having an irregular surface the Roche product does not separate from other dry ingredients during mixing or vibration.

Third, Roche powders do not stick to machine dies and punches. Capping and spring do not occur during compression.

Fourth, extrusion loss is low. This advantage comes from the product's excellent resistance to the high pressures found in tablet making.

Powdered food supplements use 'Roche' dry vitamin A and D_2 for ease of manufacture.

DRY TYPES (continued)

The following Roche types have been found most popular:

Type 500-dry vitamin A acetate. 500,000 U.S.P. units per gram.

Type 325-dry vitamin A acetate. 325,000 U.S.P. units per gram.

Type 500 A-50D-dry vitamin A acetate and vitamin D_2. 500,000 U.S.P. units of vitamin A and 50,000 U.S.P. units of vitamin D_2 per gram.

Mesh Sizes: Each type available in two mesh sizes: No. 40 and No. 60.

Packaging—All types of 'Roche' dry vitamin A are packed in polyetheylene bags, with protective sealer, in drums and in 1 and 2 kilo tamperpruf metal containers. Small quantities in amber s.c. bottles.

SPECIAL BLENDS

Roche has various potencies of vitamin A in vegetable oil, alone or with beta carotene 'Roche' or vitamin D_2, according to your formula. These are widely used for fortifying margarine and other food products. With a Roche blend of vitamin A and carotene, processors have the advantage of *fortifying* and *coloring* their products in just one plant operation.

Custom-made blends of 'Roche' vitamin A and other oil-soluble ingredients such as vitamin E 'Roche' are also available.

These are packaged in batch size, sanitary tin cans or in bulk packings to suit your manufacturing operation.

Beta CAROTENE 'Roche'

Use 'Roche' beta Carotene to supply *safe, convenient* coloring combined with *nutritional* value for margarine, shortening, butter, cheese, yellow baked goods, edible oils, and other foods.

Beta carotene is the natural coloring matter of butter and other dairy products. It is a constituent of cereal grains, alfalfa, carrots, and other vegetable foods. 'Roche' beta Carotene imparts a *true* natural yellow color to your foods without any trace of green. 'Roche' beta Carotene adds nutritional value; theoretically, one gram equals 1.666,667 millions U.S.P. units of vitamin A activity. Extensive tests show that "Roche' beta Carotene has excellent color stability.

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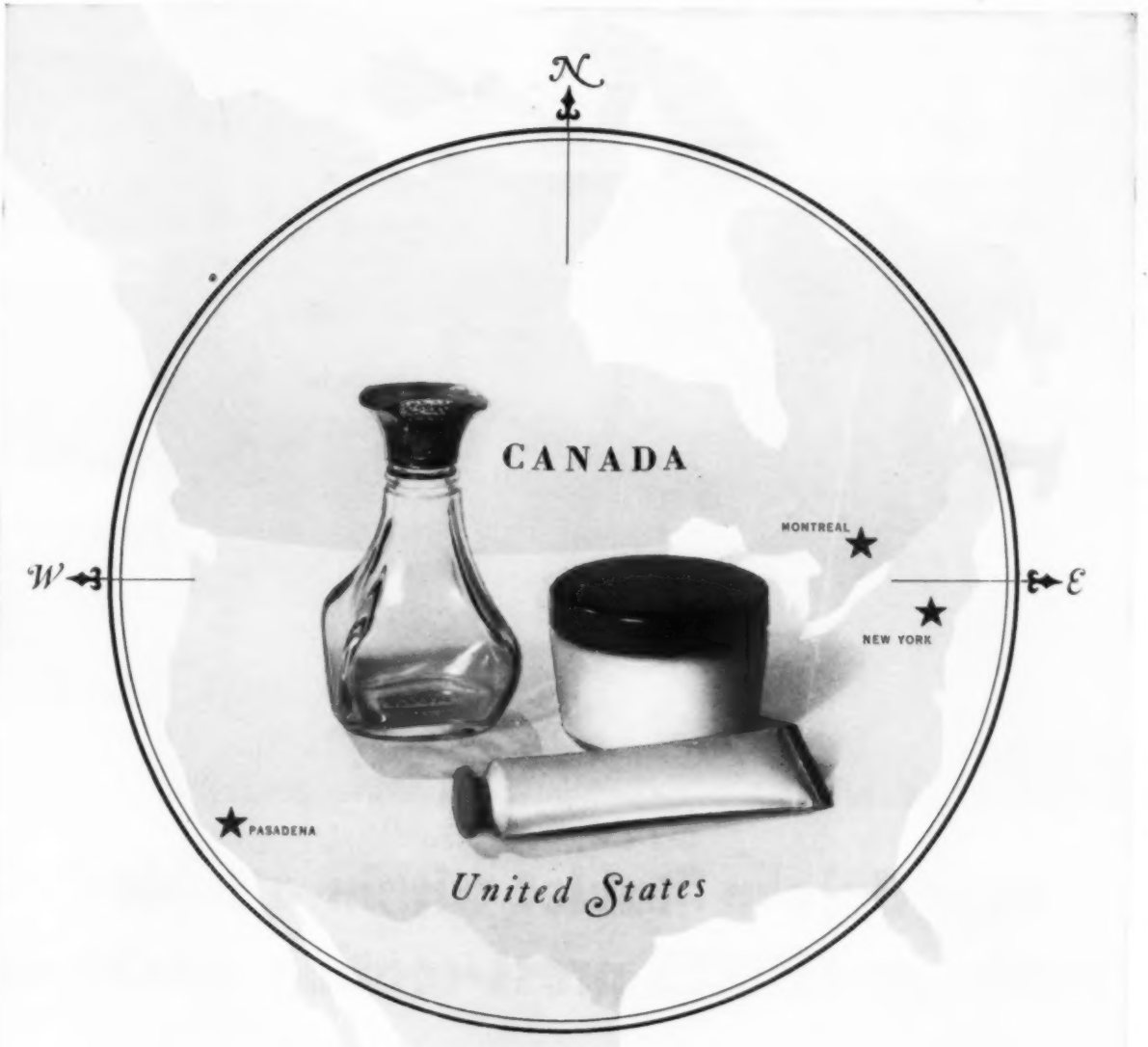
NUtley 2-5000 • In New York City dial OXford 5-1400

Pacific Coast distributor: L. H. BUTCHER, San Francisco, Los Angeles, Seattle, Portland, Salt Lake City

In Canada: Hoffmann-La Roche Ltd., 286 St. Paul Street, West, Montreal, Quebec

Roche Ad No. 2699



FROM COAST TO COAST

Avon's Strategically Located Laboratories in the United States and Canada Provide Manufacture and Packaging for Famous Private Brands of Fine Cosmetics*

Your cosmetics and toiletries have the advantage of production near your best markets . . . East, West or Canada . . . when you have them prepared by Avon. You will find it economical to have your products produced at any one of these laboratories, or at all at the same time, assuring you a real saving in delivery time and cost.

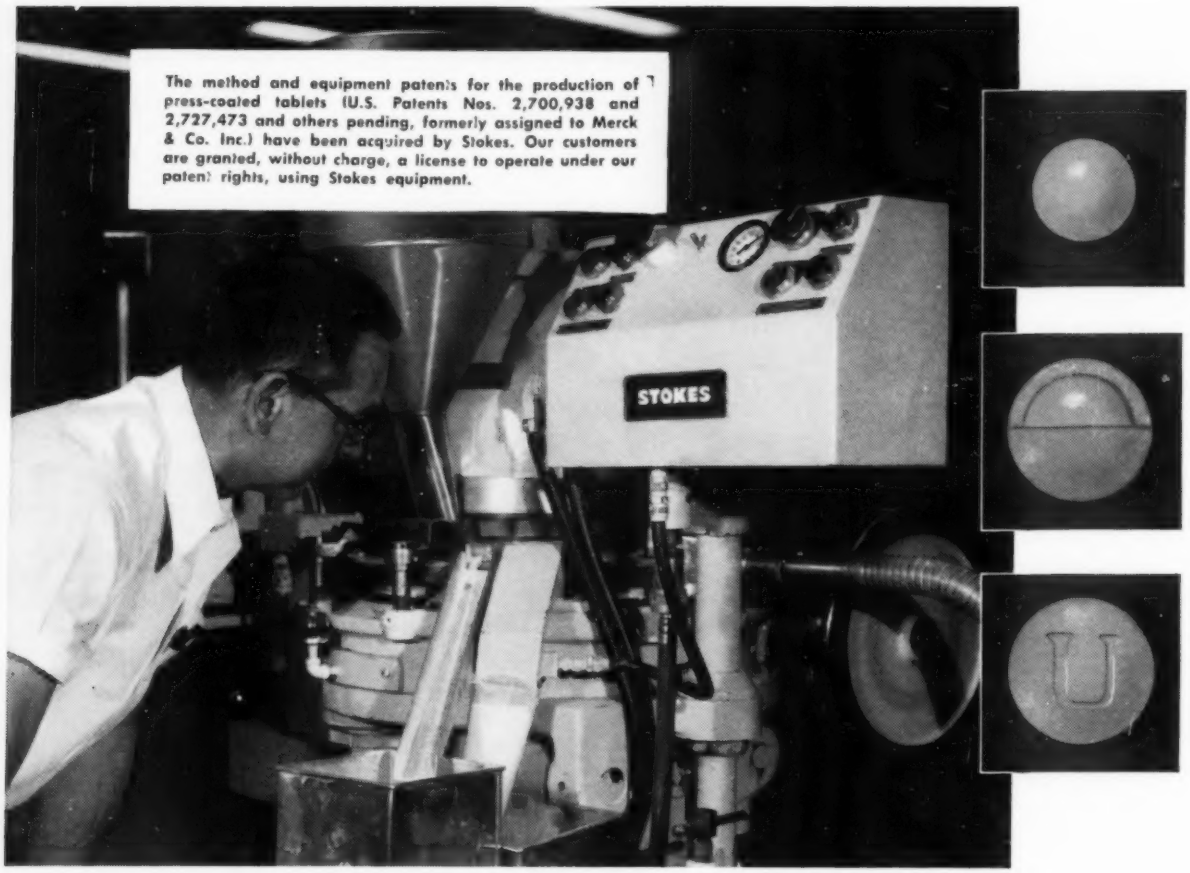
Your Private Brands will be produced with strict adherence to the formulae you desire . . . and be packaged precisely as you wish. Avon's specialized knowledge and experience, developed over the past 70 years, are your assurance of quality in every phase of production.

Call or write Avon for complete information concerning the production of your own brands of toiletries and cosmetics.

Avon Products INC.

Private Brand Division, 30 Rockefeller Plaza, New York 20, N. Y.

STRATEGICALLY LOCATED LABORATORIES IN SUFFERN, NEW YORK; CHICAGO, ILLINOIS; PASADENA, CALIFORNIA; AND MONTREAL, CANADA


The method and equipment patents for the production of press-coated tablets (U.S. Patents Nos. 2,700,938 and 2,727,473 and others pending, formerly assigned to Merck & Co. Inc.) have been acquired by Stokes. Our customers are granted, without charge, a license to operate under our patent rights, using Stokes equipment.
STOKES

New Upjohn "tablet within a tablet" made on STOKES press-coating machines

One of the most interesting modern techniques in pharmaceutical manufacturing is being applied at The Upjohn Company, Kalamazoo, Michigan, where new Stokes press-coating machines are making a unique new tablet called Cordex* Forte, Buffered. This product contains Delta-1-hydrocortisone, acetylsalicylic acid and calcium carbonate. Press coating, necessary because of certain incompatibilities in the formula, is made practical and economical by production on the new Stokes machines.

Stokes press-coating machines produce tablets with an accurately controlled outer layer surrounding a core tablet. By this method, products never before considered practical can be manufactured to a high degree of precision and uniformity, and at economical cost. For example, you can make multiple-dosage tablets . . . time-delay coatings...combinations of incompatible ingredients . . . coated tablets of materials adversely affected by water.

Core tablets are prepared on a standard press, then automatically hopper fed to the press coater. The outer coating is pressed on all sides . . . giving a finished tablet in which the core is accurately centered, uniformly coated to required thickness and density. Core-less tablets are automatically rejected.

Find out for yourself how this new tabletting principle can help to make interesting new product ideas practical by writing to Stokes today.

Trademark, Reg. U.S. Pat. Off.

International Division
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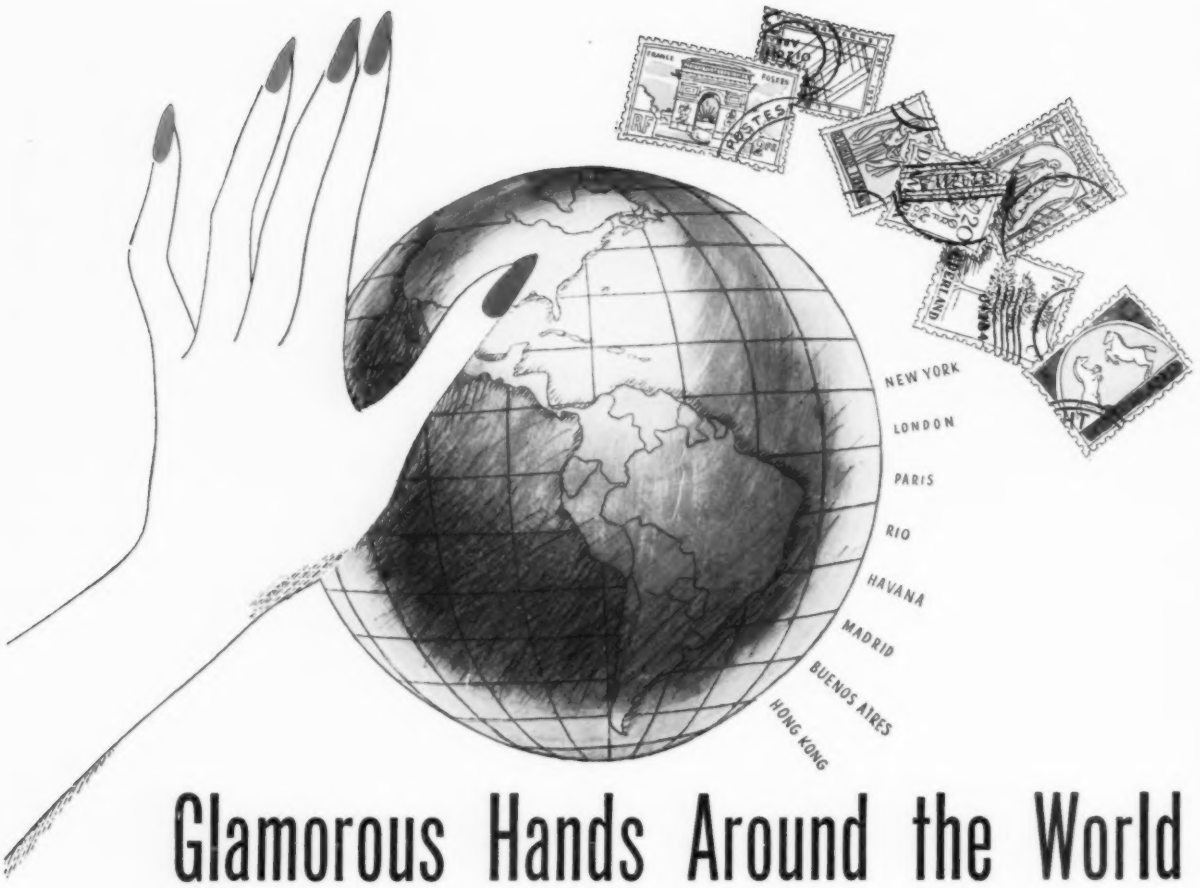


Glamorous Hands Around the World Call For the Foremost Name

DURLIN *for bulk nail enamel*

DURLIN is the Foremost Name in BULK NAIL ENAMEL catering to the leading class packagers the world over. Durlin is first in quality, first in fashion-right colors, first in technical and packaging service.

glamorous hands *around the world . . .*

DURLIN CO.

744 Broad Street, Newark 2, N. J.

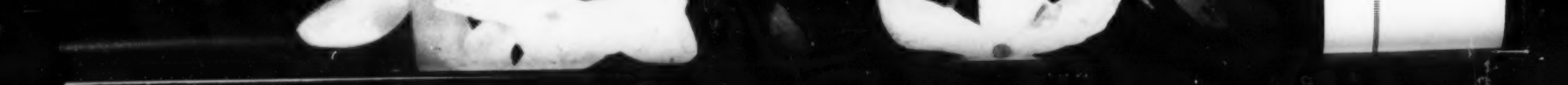
Cable Address: Durlin Newark Newjersey

AMONG the various operations that contribute to a high total of customer-satisfaction—which, of course, is our first and most important goal—is the one pictured above. This is our Bottle Washing Department. The huge automatic washer shown is one of the most efficient machines made for an operation of this type. It handles practically every piece of equipment we use—every carboy—every stand bottle, pail, funnel, measure, etc., is run through to insure complete cleanliness and sterilization. These pieces receive a thorough pre-rinse, then a bath in hot caustic or detergent solution at 180°, followed by two additional rinses. Final passage through the clean, hot air of the drying chamber delivers each piece sterile, spotless, sparkling, contamination-free—and, again, ready for use. A small detail, perhaps, in the over-all operation of our business, but it is one that means, ultimately, added protection for *you*.

FRITZSCHE *Established* 1871 *Brothers, Inc.*

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.

BRANCH OFFICES *and* *STOCKS: *Atlanta, Georgia, Boston, Massachusetts, *Chicago, Illinois, Cincinnati, Ohio, *Los Angeles, California, Philadelphia, Pennsylvania. San Francisco, California, St. Louis, Missouri, Montreal and *Toronto, Canada and *Mexico, D. F. FACTORY: Clifton, N. J.



JASMIA

A FRITZSCHE SPECIALTY

Of all the basic ingredients used in perfume compounding, few are more highly esteemed than the Absolute Essence of Jasmine. Today, however, the cost and availability of this incomparable material prohibit its use in any but the most exclusive and costliest scents. This, of course, has led to intensive effort on the part of both users and suppliers to produce a synthetic substitute which might suitably replace the natural oil. In our own efforts to perfect a jasmine replacement, we have had the advantage of many years of intimate field experience both in the cultivation and growing of jasmine flowers and in the final extraction of the oil. This background, supplemented by many years of laboratory study and research, has culminated in the development of what expert judges assure us is the finest replacement for Jasmine Absolute they have ever observed. We call our product JASMIA. This specialty may be used in complete replacement of the Absolute or as an extender of natural jasmine to any degree desired. Its total effect in a composition is remarkably like that produced by similar proportions of the natural oil, yet its price is less than one-tenth that of any Absolute now offered. JASMIA is intended, of course, for use in the finest compounding, but at this price, products which ordinarily could not support a backing of Absolute can now benefit appreciably by the quality-lift this beautiful specialty provides. May we urge you to try JASMIA . . . and to write for your FREE test sample *today*.

CREATORS of MADE-TO-ORDER FRAGRANCES for PERFUMES, TOILETRIES and COSMETICS

ODORANTS and DEODORANTS for INDUSTRIAL and TECHNICAL USE

SUPPLIERS of AROMATIC CHEMICALS, BASIC PERFUME and FLAVOR RAW MATERIALS

FRITZSCHE Established 1871 Brothers, Inc.

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.

BRANCH OFFICES and *STOCKS: Atlanta, Georgia, Boston, Massachusetts, *Chicago, Illinois, Cincinnati, Ohio, *Los Angeles, California, Philadelphia, Pennsylvania, San Francisco, California, St. Louis, Missouri, Montreal and *Toronto, Canada and *Mexico, D. F. FACTORY: Clifton, N. J.

We at FRITZSCHE BROTHERS, INC., *send you*

Greetings *and All Good Wishes for*

Christmas *and the* **New Year**

Heliotropine *by Penick...*

the essence of success!

When your formulations include heliotropine, it should be Heliotropine by Penick!

Penick quality control assures uniform white crystals and the precisely correct odor note, shipment after shipment. Production difficulties due to variations are eliminated.

Widely used in sweet pea, lilac, carnation and fancy floral bouquets, recrystallized Heliotropine by Penick imparts the exact fragrance desired. It is also valuable as a fixative in perfume and flavor compositions.

Heliotropine Technical is also available from Penick for use in industrial compounds.

Samples of both will be sent promptly on request.

PENICK

Essential Oils and Aromatics Division

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PERFUME ALBUM

BY JILL JESSEE

STOP sleuthing! We still have this popular book! Not out of print yet; but the supply is limited, and no second edition is planned.

"Perfume Album" has been read and referred to, praised and appreciated by *everybody who's anybody* in the perfume industry. By salesgirls and salesmen; by buyers and sales managers; by copywriters and beauty editors; by advertising and publicity people. How about you?

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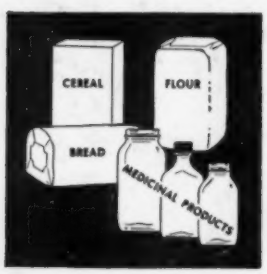

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